Thursday,

The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 23. No. 2 TULSA, OKLAHOMA, DECEMBER 13, 1923

Copyright, 1923, by The Petroleum Publishing Co.

Record Drop in Crude Oil Production

Average daily production in United States week ending Dec. 8, 1,996,537 bbls.

Output Declined 99,642 Bbls. Daily Last Week Following Drop of 163,849 Bbls. Daily During Two Previous Weeks

Loss in daily production in United States week ending Dec. 8, 99,642 bbls.

By Andrew M. Rowley

The largest decrease in the average daily production of crude petroleum in the United States ever recorded in the history of the industry was registered last week when the output of all fields of the country showed a decline of 99,642 barrels a day. This enormous drop in production brought the average daily yield last week to 1,996,537 barrels, this being the first time since last May the production of crude petroleum in the United States has been below the 2,000,000-barrel-daily mark.

The history of the oil business does not record another period when production of crude oil experienced such a great and rapid decline as it has during the past three weeks. In that comparatively brief period, the production of all the fields of the United States has dropped 263,491 barrels a day, a decline of 88,194 barrels daily for the week ending November 24 being followed by a drop of 75,655 barrels daily for the week ended December 1 and a record being established during the past week with a further decrease of 99,642 barrels a day.

Powell Chiefly Responsible

As was the case in the two weeks previous, the Powell Field of Texas was the big factor chiefly responsible for the great decline. That field showed an average daily production during the week of 124,780 barrels as compared to an output of 195,811 barrels for the week ending December 1, a drop of 71,031 barrels a day. The production of the field on Monday morning of this week was estimated at 111,000 barrels.

The decline in production at Powell during last week, however, was not as rapid as during the previous two weeks, that is, the decrease from day to day was not so great. This is shown in the daily production records as follows: Sunday, 135,075; Monday, 125,400; Tuesday, 129,150; Wednesday, 123,395; Thursday, 122,025; Friday, 120,018, and Saturday, 118,400. The decreases of from 10,000 to 35,000 barrels from one day to the next as recorded during the week ending December 1 were lacking.

In addition to the great drop at Powell, the California fields showed a decrease of 16,000 barrels daily. Oklahoma was down more than 2,500 barrels a day and the Wyoming-Montana area showed a decrease of more than 10,500 barrels daily.

Less Decrease From Now On

It is safe to say the enormous decreases in production of the past three weeks will not be continued. The Powell Field has accounted for a large part of the drop of 263,491 barrels daily. Declines in the output of that field from now on may be expected to be much less and operators who are in close touch with conditions in that area believe it will be but a short time until the decline curve at Powell will straighten out and production there assumes a more steady record, much like the neighboring field at Mexia did. This is indicated by developments of the past week.

The big drop at Powell resulted from flowing wells stopping flowing. These wells will be put on the pump. During the time equipment is being installed to pump these wells, production is off. So many of the big wells at Powell stopped flowing at practically the same time, the output of the field dropped off almost overnight. But there are a large number of operators interested in the field and all are arranging to pump their wells. This will hasten the time when former flowing producers will again enter the production column although no oil is being taken from them now. When these wells start pumping, production at Powell will be held up and the average record of the field from week to week will be more nearly stationary.

PRODUCTION IN THE UNITED STATES

Estimated daily average production in the oil fields of the United States for the week ended December 8, and a comparison with the previous week follows:

Field	Dec. 8	Dec. 1
Oklahoma—Northern Fields:		
Tonkawa	48,320	47,783
Burbank	78,800	83,670
Other Osage Fields	30,100	28,075
Cushing and Shamrock	24,440	24,415
Bristow and Eastern Bristow	47,125	47,305
Northern Miscellaneous	86,115	86,120
Southern Fields:		
Healdton	17,325	17,315
Hewitt	21,125	21,310
Southern Miscellaneous	24,945	24,960
Total Oklahoma	378,295	380,953
North Louisiana	56,705	56,890
Arkansas—		
El Dorado	11,385	11,525
Smackover Light	16,900	17,730
Smackover Heavy	80,800	80,400
Other Arkansas Fields	10,640	10,305
Total Arkansas	119,725	119,960
North Central Texas	117,220	115,475
East Central Texas (Mexia, Currie, Corsicana, Powell)	169,445	240,506
Kansas	71,300	71,050
Total Mid-Continent Area	912,690	984,834
Gulf Coast	94,148	95,277
Eastern	110,525	110,200
Wyoming-Montana	147,174	157,868
California—		
Santa Fe Springs	195,000	210,000
Long Beach	240,000	235,000
Huntington Beach	69,000	71,500
Torrance	31,000	33,000
Remainder State	197,000	198,500
Total California	732,000	748,000
Total United States	1,996,537	2,096,179

Decrease, 99,642 Barrels

One Big Well Comes Back

As an example of what may be expected when the former flowing wells at Powell are placed on the pump is cited an instance of the past week. One well of the E. L. Smith Oil Company which was completed late in October and which flowed for a couple of weeks stopped flowing and pumping equipment was installed. When this was done, the well started flowing again through the tubing. It stopped again and then mud was bailed from the hole for seven days. The well then was drilled four feet deeper and it started flowing again last Saturday, making 5,300 barrels. It requires some time to put the wells on the pump as all wells at Powell were drilled with rotary outfits. The rotary mud must be cleaned from the well and the sand cleared of it before wells can be pumped. But when this mud is cleared and wells started to pumping, operators who have studied the field and conditions, believe these pumpers will serve to help offset losses in production caused by wells stopping flowing.

The representative of one large company who has made a careful check of conditions at Powell estimates the field will drop to from 85,000 to 90,000 barrels a day and will remain settled at that output for some time. He believes considerable production will be obtained from pumping the wells and cites the experience of the Humphreys Oil Company, which has had wells pumping for nearly six months and which are averaging now about 145 barrels a day.

In Other Sections of the Country

The Burbank Field in Oklahoma continues its slump in production and the loss in that area is responsible for the continued decline of output in Oklahoma. The agreement regarding the curtailment of operations in the Burbank Field, which has been in effect for some time, has been extended about one month, or until January 10. When that agreement is abrogated, it is safe to assume production in Burbank will increase considerably and fairly rapidly. This is a condition which should be considered by operators who are planning intensive drilling campaigns. Burbank oil is of high gravity and the companies operating there are among the largest in the business and well equipped to institute an intensive drilling campaign if deemed necessary.

The Santa Fe Springs Field in California dropped below the 200,000-barrel mark last week when its average production was 195,000 barrels daily, as compared to 210,000 barrels for the week before. Torrance, which had shown a material increase in output during the two previous weeks, dropped back slightly, the production there decreasing 2,000 barrels a day. Long Beach staged a come back, increasing its output by 5,000 barrels a day for a total daily output of 240,000 barrels.

Inclement weather in the Gulf Coast region further curtailed operations there and production was down to a low mark. With a continued heavy demand for Gulf Coast crude for lubrication purposes and production having declined considerably, operators in that section have hopes for an increase in the posted price soon after the first of the year. However, Gulf Coast operators are not alone in this hope. With the rapid decrease in the output of crude and consumption holding up remarkably well, it is regarded as only a matter of a comparatively short time until the posted quotations of crude will be advanced.

Table of Contents on following page.

TABLE OF CONTENTS

Record Drop in Crude Oil Production ---- 17
By Andrew M. Rowley
Output declined 99,642 bbls. daily last week following drop of 163,849 bbls. daily during two previous weeks.

Can the Oil Business Be Stabilized (Editorial) ---- 24
Stabilization has not been found impossible in other great industries and there is nothing inherent in the petroleum industry which prevents it from taking advantage of one period's surplus to provide for the shortcoming of another.

W. C. Teagle on Standard Dissolution ---- 21
By D. W. Bowles
President of New Jersey Co. talks of development since 1911 and present situation in oil world.

Problems of Oil Burner Manufacturers ---- 34
By Ralph T. Baker
Need of equipment to utilize low gravity oils emphasized at meeting of oil producers and makers of burners.

Fundamentals of Petroleum Situation ---- 36-37
By Charles E. Bowles
Eastern area is only market. Mid-Continent dangerously overbuilt with refineries.

Must Fight Bad Legislation From Start ---- 58
By Charles E. Kern
Oil industry warned of methods of congressional lawmakers and need for representative contact with members.

Men Known in Oildom and Personals ---- 62

American Petroleum Institute Proceedings

Institute Sees Prosperity for Industry ---- 19
By James McIntyre
Leaders meet in spirit of optimism. President O'Donnell warns against government interference.

Harmonious Industrial Relations ---- 19
By L. V. Nicholas

Railroads Ask Assured Fuel Oil Supply ---- 20
By J. M. Johnston
Institute told price fluctuations and fear of shortage handicap oil burning advance.

Oil Field Use of Electricity Urged ---- 20
By W. G. Taylor

Uses for Petroleum Products on Roads ---- 21
By J. E. Pennybacker

Need Home Burner for Low Gravity Oil ---- 28
By G. I. Sweney
Cooperation between producers, manufacturers and public will open broad field with benefits for all.

Studying Petroleum Standards ---- 28
By C. L. Warwick
Society for testing materials working along this line.

Galician Is Disrupted by Peace ---- 32
By Edward Prizer

Oil Burner Makers Urge Cooperation ---- 34
By E. P. Bailey
Manufacturers want petroleum industry to aid in efforts to extend uses for fuel oil.

Petroleum Industry Needs Salesmanship ---- 23
By Henry L. Doherty
Sits by idly while new business worth $1,000,000,000 awaits development. Home heating one source.

Iron and Steel Problems Outlined ---- 68
By Francis B. Foley
Bureau of Mines metallurgist tells of work being done by his department.

Pipe Line Transportation Problems ---- 72
By D. S. Bushnell
President Buckeye Pipe Line Co. described present day difficulties.

Using Fuel Oil at Sea ---- 102
By Joseph E. Sheedy

Heating of Homes With Oil ---- 103
By C. H. Chalmers

Oil Industry Needs Better Advertising ---- 111
By W. M. Horner

Field Operations

Wyoming ---- 40
By F. B. Taylor
Salt Creek test indicates field capable of producing 155,000 bbls.

Oklahoma ---- 42
By C. D. Lockwood
Burbank shutdown agreement to remain in force at least another month.

Gulf Coast ---- 44
By P. L. McGreal
Already curtailed operations further held back by inclement weather.

Canada ---- 44
By Victor Lauriston
Additional gas production developed in Okotoks Field southwest of Calgary.

East Central Texas ---- 46
Production shows average daily decline of 71,031 bbls. during week.

North Central Texas ---- 48
By Dan F. Dugan
Operators more optimistic as proration is discontinued and flush output run.

California ---- 50
By L. P. Stockman
Torrance Field expected to show substantial increase in output next year.

North Louisiana-Arkansas ---- 52
By M. L. Vaughn
Water encroachment said to menace great natural gas field near Monroe, La.

Central West ---- 54
By Whit
Sun Oil Co. completed 260-bbl. producer in old Trenton Rock Field in Ohio.

Kansas ---- 54
By C. D. Lockwood
Wildcat test in Russell County reported standing with hole full of oil.

Pennsylvania-West Virginia ---- 56
By D. S. Wakenight
Few completions in eastern fields and only few better than pumpers.

West Kentucky-Tennessee ---- 56
By Vern T. Whitney
Paragon Development Co. brings in good producer in Cumberland County, Kentucky.

Detailed Operations Western Field in November ---- 119

Refining and Marketing

Upward Price Trend in Group 3 Market ---- 22
By C. O. Willson
Fuel oil advances 5 cents and gasoline from ¼ to ½ cent higher. Other products either firm or advancing.

Marketers Confused as to Who Is Independent ---- 23
By Ralph T. Baker

Oil Securities Show Steady Undertone ---- 26
By N. O. Fanning
Practically all gains held. Stock market marking time awaiting new developments in oil industry.

Crude and Refined Oil Prices ---- 30-31

Coastal Refiners Have Good Business ---- 32

Tank Wagon Quotations ---- 32

Refinery Statistics for October, 1923 ---- 38

Refining and Marketing Briefs ---- 74

Casinghead Gasoline Plants Add to Revenue ---- 74
By J. H. Welch

Gasoline Stocks Compared With Demand ---- 76
By H. K. Davis
Actual quantity on hand generally meaningless unless normal consumption for that period is considered also.

Good Weather Aids Gasoline Market ---- 82
By Ralph T. Baker
Open season in Chicago territory results in continued good demand.

Eastern Refined Market Quiet ---- 84
By N. O. Fanning

Mid-Continent Refiners' Report ---- 86

Pennsylvania Market Shows Improvement ---- 96

Improvement Shown by October Data ---- 98-99
By C. O. Willson
Government statistics support contention that betterment of oil situation has been under way for weeks.

Miscellaneous

Advertisers' Index ---- 14

Natural Gas Developments ---- 60

Equipment and Supplies ---- 66

Classified Advertisements ---- 108-109

Institute Sees Prosperity for Industry

Leaders at St. Louis Meet in Spirit of Optimism. President O'Donnell Warns Against Government Interference

By James McIntyre

ST. LOUIS, Mo., Dec. 12.—It may be the general optimism which pervades the oil industry is responsible for the extraordinary attendance at the American Petroleum Institute's fourth annual meeting, or it may be that together with the unusual interest taken is the keynote of this year's meeting—the greater utilization of petroleum products, but whatever cause is attributed to it the fact remains that the opening meeting yesterday was attended by twice as many oil men as attended last year's first day's session. The registration was twice as great as on the first day last year and a still larger attendance was noted tonight. The meetings close tomorrow night.

The Institute attracted leading oil corporation officials and individual operators and refiners from all fields in the United States. They began coming on Monday and by Tuesday the St. Louis hotels were taxed to take care of them. The big ball room of the Statler Hotel was not large enough to seat comfortably the audience at the first general meeting.

The best feeling prevails among the visitors. The seemingly unanimous sentiment as to the business situation is that while the industry is still passing through the period of adversity to which it has been subjected for the past year, it is on the way to prosperity with nothing in sight to stay its course.

President O'Donnell's Address

President Thomas A. O'Donnell, presiding at the opening session, reviewed the condition of overproduction this year—a condition which he said no man could foresee, for which no one could be held responsible and for which no particular oil producing State could altogether be blamed, but which had resulted in the public being enabled to buy gasoline for less than it costs to produce it. The time must come, he said, when the public must pay more or the oil industry cannot perform the functions of supplying a necessary product for our industrial life.

When it became known that an overproduction threatened in the industry, there was no way of saving the situation, the speaker said. No individual or clique could control it. It was spread over too wide an area to be handled by any one or by any group or any organization.

President O'Donnell said that about 50 per cent of the petroleum industry and about 90 per cent of the consuming public believed the industry is regulated in so far as prices and prosperity are concerned.

"These people believe that certain men whom they credit with this power are almost super-human in their intelligence; that they are far sighted; that they know more about it than any of us and I want to contradict that conclusion. I know a lot of them. They make mistakes. I believe the petroleum industry as it is now conducted in America is one of the most healthful and inspiring things and the greatest developer of our young manhood of anything in our industrial life, because of its uncertainties, because of the visionary hope through which men struggle in that confused mass to climb to the top. There is no business more competitive in its nature and with a wider ownership among the citizens of the United States. There is not a person or a family that controls 5 per cent of it. The automobile business is never criticized, yet it has made greater riches quicker, more centralized by far than the petroleum industry. It is easy to imagine that 50 per cent of the automobile industry is divided between two families and the public is not aroused to frenzy, yet they want to send us to jail and to elect them presidents."

President O'Donnell, commenting on the ease with which the public may be aroused by sensational newspapers and demagogues over changes in the prices of the every day necessities like gasoline or sugar, said little attention would be paid to similar sensational campaigns directed against increases in the prices of millinery and clothing.

Industry Coming Back

The speaker warned against too much optimism in the oil business. The fact that one field had gone off greatly in production and the worst seemed to be over, should not, he said, result in too quick an activity in anticipation of the thing all know is going to happen. "We are going to have a change some time. The trouble is in the measure of the change," he said.

Commenting on the statistical service rendered by the institute, Mr. O'Donnell said he hoped some day the figures given the public would include weekly estimates of stocks not only of crude oil but of gasoline.

He welcomed the recent criticism of the Institute and its leadership. He said it denoted an interest in the association and an acknowledgement of its importance in the industry.

The future, he said, looked hopeful. He believed that in six months, "if we don't lose our heads and drill ourselves to death we will be drawing on stocks again and we will put our industry where it belongs."

In conclusion, President O'Donnell said:

"In suggesting cures within the industry itself, there are all kinds of propositions to have government, State county or some official do something to make the other fellow, your competitor, live up to rules that you believe would benefit your particular business. Again that is human nature. There are hardly any of us that want the government to go into our industrial life in this country except just one thing that we wan them to do; nearly every fellow has something he wants to have the government do and then leave everything else alone. I am one of those fellows that wants the government to leave us alone entirely, in as much as we serve the American people properly, and I believe that the proper service will be brought about by that rule of supply and demand in this business with its abstract problems that can be reached in no other way.

"I am against all kinds of bureaucratic supervision or government interference in this business so long as the business is conducted on a competitive basis with so large a part of the American people taking part in it, and I believe that any man, no matter what walk of life he is in, that advocates for his own benefit or thinks he is advocating for his own benefit government interference is only laying up trouble for himself.

"In that I recognize there are many things that could be done better if you and I had our way about it. But it is the united effort of all the people engaged in this industry that has brought about this wonderful development, and, gentlemen, it is the most romantic development that has ever occurred in the history of man. It has been useful to the people engaged in it and to humanity at large."

The kenynote speech of the three days' meeting was delivered by Henry L. Doherty, president of Henry L. Doherty & Co., "The Utilization of Petroleum Products." The address made a deep impression on the large audience and the speaker was given an ovation at its conclusion.

Election of Directors

At the general session Tuesday evening the following directors were elected in accordance with nominations made by the board of councillors, acting as the committee on nominations: J. Edgar Pew, the Sun Oil Co., Dallas, Tex.; T. A. Dines, Midwest Refining Co.; P. M. Miskell, Empire Refineries, Inc., Tulsa, Okla.; F. A. Pielsticker, Skelly Oil Co., El Dorado, Kans.; Charles S. Suhr, Penn American Refining Co., Oil City, Pa.; W. H. Barber, the Barber Co., Minneapolis, Minn.; E. P. Whitcomb, Union Natural Gas Co., Pittsburgh, Pa.; A. C. Bedford, Standard Oil Co. of New Jersey, New York; Alexander Duessen, American Association of Petroleum Geologists, Houston, Tex., and George S. Davison, Gulf Refining Co., Pittsburgh, Pa.

The following directors whose terms expired were re-elected: M. L Requa, San Francisco; B. B. Brooks, Consolidated Royal Oil Co., Casper, Wyo.; J. H. Markham, Jr., Tulsa, Okla.; J. D. Collett, O'Keefe & Collett, Fort Worth, Tex.; Frank Haskell, Tidal Oil Co., New York; J. C. O'Donnell, Ohio Oil Co., Findlay, Ohio; E. W. Clark, Union Oil Co., of California, Los Angeles; E. T. Wilson, Continental Oil Co., Denver, Colo.; A. P. Coombe, Standard Oil Co. of Ohio, Cleveland; H. E. Felton, Union Tank Car Co., New York; W. M. Welch, Tidal Refining Co., Tulsa, Okla.; Herbert Pratt, Standard Oil Co. of New York; E. L. Doheny, Pan American Petroleum & Transport Co., New York; W. N. Davis, Mid-Continent Oil & Gas Association, Tulsa, Okla.; E. C. Lufkin, The Texas Co., New York; E. B. Reeser, Barnsdall Corp.; J. F. Lucey, Lucey Manufacturing Corp., New York; H. L. Doherty, H. L. Doherty & Co., New York; J. W. Van Dyke, Atlantic Refining Co., Philadelphia; H. F. Sinclair, Sinclair Consolidated Oil Corp., and Thomas A. O'Donnell, California Petroleum Corp.

Group Meetings

The Tuesday evening session was featured by the paper of Joseph E. Sheedy on the use and value of oil under boilers and in Diesel engines for ship propulsion, which was read by Captain Gatewood, U. S. N., who uttered a warning to the oil industry in reference to the pollution of harbor waters by fuel oil waste. He advised the American Petroleum Institute to frame a bill to be introduced in Congress which would cover this nuisance and provide a remedy, add-

(Continued on Page 102)

NICHOLAS URGES WHOLE INDUSTRY TO WORK OUT COMMON PROBLEMS

By L. V. Nicholas

President, National Petroleum Marketers' Association
Before Fourth Annual Meeting, American Petroleum Institute, St. Louis, Mo., December 13

The need for harmonious industrial relations is universally recognized. Professor Steiner makes the statement that "the trouble in this country today is our so-called 'stand-patters' lean so far back they have concussion of the brain, while our progressives lean so far forward they have the vertigo."

In the development of harmonious industrial relations, we must studiously avoid extremes. It has always seemed to me it is the very simple, ordinary things we are overlooking which furnish the full and complete solution for our industrial troubles, while we frantically search for something involved and complex, obsessed with the idea that the simple, homely and apparent things to do, cannot possibly furnish the answer.

Over one-half of our troubles are the direct result of the personal attitude of men who should function impersonally. Personal grudges and personal disagreements over the matter of filling station differentials; the policy of giving away pumps and tanks; the paying of premiums for crude; offset drilling and other differences of opinion, too numerous to mention, are the cause of bitter and relentless industrial warfare, while the invested millions in the industry are called on to foot the bill.

One of our great thinkers has made this statement, "The organization or individual who cannot face criticism without getting mad, is incapable of functioning constructively." It is a fact that in this big industry of ours, we have all gotten mad too easily? The group in the industry to which I belong has for some time been endeavoring to bring about the establishment of associations—city, State and National. We confidently believe that meeting together as members of an industry, getting acquainted and discussing our problems is a highly important and necessary function. Despite much misunderstanding, our national conference of oil men at Chicago during the past summer was the first step in the right direction. Producers, refiners and jobbers left Chicago with a much clearer and better view of one another's problems—it was of outstanding value as a beginning.

More meetings of this kind should be held as occasions warrant—the war proved their value. No officer of any company should be too big to attend and he should be willing to listen as well as talk.

Both the public and our industry gain from such meetings and we have nothing to fear from alleged loose talk—loose talk is like any other loose thing—it is soon lost in the dust along the roadside and something sound and constructive takes its place.

Accounting System

Our industry has four great, separate and distinct subdivisions: producing, tansportation, refining and distribution, and I sometimes think a fifth, which should be called the patent division. All of these great divisions may be integrated as they are in many of the larger organizations, and yet every one in itself is a distinctly specialized business and it is next to impossible to visualize any kind of harmonious industrial relations being established on a permanent basis, unless even in the integrated companies, these great divisions set up a segregated accounting system which will permit each and every one of them to show a proper and adequate return on the capital invested in that particular branch or subdivision, and this accounting system should show proper charges for overhead, depreciation and all other usual expenses, exactly as they would be han-

(Continued on Page 106)

Railroads Ask Assured Fuel Oil Supply

American Petroleum Institute Told Price Fluctuations and Fear of Shortage Handicap Oil Burning Advance

By J. M. Johnston
Fuel Agent, Missouri-Kansas-Texas Railroad
Presented at Group Session on Utilization of Petroleum, Fourth Annual Meeting, American Petroleum Institute.

In 1907 the fuel oil consumption by railroads in the United States was 18,849,803 barrels. In 1917 the consumption of fuel oil by railroads in the United States for the first time reached 35,000,000 barrels. The annual consumption of fuel oil by railroads had been fairly constant from 1911 to 1916 at from 29,000,000 to 32,000,000 barrels. It reached 44,752,344 barrels in 1922.

It is particularly noteworthy that the increased use of oil as locomotive fuel in the southwest has been practically coincident with the increase in imports of oil from Mexico. In 1917 the imports of oil from Mexico for the first time reached 30,000,000 barrels; in 1918, 37,719,000 barrels; in 1919, 52,662,000 barrels; in 1920, 106,000,000 barrels; in 1921, 125,000,000 barrels; in 1922, 99,164,000 barrels.

During the period immediately preceding 1919, it was not possible for some railroads now in oil to secure contracts for domestic oil for time periods and in sufficient quantities to guarantee them a fuel supply on which they could rely for more than a few months ahead. It was not until conditions permitted the railroads to make time contracts for delivery of Mexican oil that there again began to be an increase in the use of oil as locomotive fuel.

Dependability of Supply

Dependability and regularity of supply are, of course, first considered by a railroad contemplating the use of oil as locomotive fuel. Contracts for such a supply, running for a sufficient time to warrant the expenditure necessary to equip the road to burn oil must be secured. In 1919 and 1920 southwestern railroads were generally unsuccessful in efforts to contract for domestic fuel oil in sufficient quantities to meet their requirements and for a period of more than a few months at a time.

The situation has changed materially since the summer of 1921, and several fuel oil contracts have been made by railroads, to run for three years, with a sliding scale of prices to advance or decline as the posted price of crude advances or declines. Southwestern railroads have, therefore, contracted for a supply of domestic fuel oil, which is available for railroad use, in addition to that contracted from other sources. The changed condition as to supply has simply resulted in increased use of fuel oil as locomotive fuel in the years 1920, 1921 and 1922. This fact indicates positively that, if the southwestern railroads now burning oil as locomotive fuel were compelled to rely on domestic sources of supply, it would be but a short time until some of them would be forced to discontinue the use of oil.

This would unquestionably result in a tremendous increase in railroad operating expenses, for the reason that most of the lines now burning oil are so located with reference to coal production as to necessitate a long rail haul from the mines with an attendant high cost of coal at fuel station. These lines, however, may, under the present conditions, secure Mexican oil on their own rails at tidewater or from domestic fields and thus reduce fuel costs.

Refinery Problems

Some of the larger oil companies, with new processes of cracking fuel oil for a greater yield of gasoline and other by-products, may cut down, in some sections of the country, the supply of fuel oil for locomotive use, and, with this thought in mind, the consumption of the lower grade of fuel or crude oil yielding little, if any, by-products, should be encouraged for the use of railroads that have no coal reserves on or adjacent to their lines, or that have to use it for economic reasons, viz., high cost of coal.

Just what the future of the refining industry is to be is a matter for time to tell. Therefore, in viewing the future supply of fuel oil for railroads, especially that secured from high gravity crude, serious thought and assurance should be given by the American Petroleum Institute to the railroads for a dependable supply.

It would indeed be fortunate if a governmental body, working in conjunction with the American Petroleum Institute, were authorized to supervise the conservation of our petroleum resources insofar as they apply to the needs of the individual railroad or industry. A comprehensive survey by such a body, after taking into consideration the geographical location of coal and oil producing territories, would determine which fuel should be used in order to serve the public interests economically and to conserve the fuel supply for future years.

The item of expense of coal and oil does not always depend upon whether the change from coal to oil should be made because the relative price of one ton of coal, f.o.b. the mine, or its equivalent of 3½ barrels of fuel oil, f.o.b. the refinery, is the same. In making investigations for some railroads, I fould that the cost of coal at the mine was less than the cost of its equivalent of fuel oil at the refinery, yet, in the final analysis, the adoption of fuel oil created a saving on account of other economies. An amount of fuel oil capable of doing the same work as its equivalent in coal can be transported cheaper.

Economy Through Oil

Various authorities have agreed that there is an average loss equivalent to 5 per cent between the mine and the locomotive due to evaporation, theft, loss in transit, deterioration in handling, storage, etc. Of the coal consumed by railroad locomotives approximately 20 per cent is consumed in non-tractive effort, in starting fires, in moving locomotives to train and in keeping the locomotives hot while standing; further, that approximately 10 per cent is lost in cinders and sparks, and that approximately 2½ per cent is lost through unconsumed fuel in ash. In fact, that only 45 per cent of the fuel consumed by locomotives is utilized—represented by heat transmitted to water to be vaporized. Many of the causes of this loss are, of course, present in an oil burner, but of the total losses over 20 per cent will not apply to oil burners.

All of these factors considered, it is certain that a very large portion of the coal consumed by railway locomotives is lost and that the use of oil overcomes this loss to a great extent. Oil reaches the locomotive unimpaired, either in quantity or quality. There is no loss whatever in transit through evaporation, theft, loss or deterioration. Economical consumption is more easily procured. In an oil burner you can, while standing, reduce your fire to the finest point or increase it to the maximum, and at least one-half of the consumption while engines are standing on sidetracks or waiting at terminals, etc., may be saved when oil is used. Considering these various points, we may safely assume there will be a saving of at least 10 per cent over coal due to the various causes enumerated.

Cost of Handling Coal and Oil

The cost of handling coal will average, conservatively, 20 cents per ton, while the handling of its equivalent in oil may be accomplished for $.0525, or a decrease of $.1475 per ton in handling oil versus coal.

Among other economies in fuel oil over coal may be mentioned expenses in connection with storage, firing tools, engine house expense, kindling fires, locomotive repairs, plowing fire guards and fire losses. Cost of changing to oil averages $2,000 per locomotive. Increase in efficiency is estimated to range from 5 per cent to 25 per cent through heavier hauls, longer runs, less changes at terminals and in switching. As locomotive weight is the chief factor in regulating bridge strength, the increased power of oil-burning locomotives without increased weight should also be considered from the viewpoint of the saving oil would effect in future expenditures for bridge strengthening. A decrease of from 10 per cent to 20 per cent should follow the use of oil in locomotives.

From the advantages just enumerated, it is evident that oil is the logical fuel for economical operation of some railroads and affords a natural outlet to the refiner for fuel oil.

Why Roads Hesitate

Railroads have in the past, and even now are, hesitating on adopting oil as fuel on account of the large expenditure involved in changing locomotives, erecting storage facilities, etc., for the reason—

1. They can receive no assurance of a supply of oil for a time period sufficient to warrant the expenditure.
2. Short-period contracts.
3. Fluctuations in price of fuel oil.

In conclusion I wish to say that, if the railroads are to continue burning oil, steps must be taken by the petroleum industry to maintain fuel stocks, in order to insure a constant source of supply and to promote a system whereby prices will be stabilized. Refiners cannot sell fuel oil at a loss and prosper, neither can railroads pay exorbitant prices for fuel oil and maintain a low operating ratio. Fluctuations in stocks and prices in the past have been too great. Both the railroads and refiners should work out a policy to make available to each other friendly assistance in order that they may prosper and safeguard each others' interests. With supply and costs solved, each will continue an era of prosperity.

OIL FIELD USE OF ELECTRICITY URGED AT PETROLEUM INSTITUTE

By W. G. Taylor
Industrial Engineering Department, General Electric Co.
Presented at Group Session on Standardization of Oil Drilling Methods, December 12. Fourth Annual Meeting, American Petroleum Institute

In the oil fields having it available electric power is used extensively to drive water pumps, gathering and line pumps, vacuum pumps, compressors for natural gasoline plants and circulating pumps in these plants. No less important are electric dehydrators, are welding equipment for pipe line and tank construction, motor drive for machine shops, and general lighting about the fields. The greatest as well as the most important use of electric power, however, is in drilling the wells and in maintaining them as producers by pumping, pulling and cleaning them.

Different motors are used for drilling than for pumping. The large motor used for drilling would not be nearly so economical in power consumption on pumping if it were used in place of the motor designed particularly for that work. The drilling motor, usually 75 horse power in capacity, is used for either cable tool or rotary work, and is supplied with control apparatus which not only gives the fine speed adjustment necessary in cable tool drilling, but also gives the right motion of the tools required for effective drilling.

Control a Factor

The control apparatus for a drilling motor also gives the speed control needed at light loads to handle such work as spudding in, fishing and tonging pipe, and in general closely duplicates or improves upon the results obtainable with steam. Two rope wheels on the headache post at the derrick give the driller complete control of the motor.

The same drilling motor equipment used for cable tools is suitable without change for the main drive on a rotary rig, the only difference in the set-up being that the motor instead of being belted through a counter shaft to the bandwheel is coupled to a gear reduction unit which drives the draw works by standard rotary chain. Separate motors are provided for the slush pumps. It has until recently been the practice to use one motor for the two pumps, shifting from one to the other as required, but the better plan now being adopted is to provide a separate motor for each pump, thus making them entirely independent of each other.

There are comparatively few locations where the danger of ignition of gas around the rig is sufficient to warrant special protection on the electrical equipment. Thousands of installations of motor equipments without such protection have been operating successfully for years, but there are unquestionably many wells on leases not yet electrified where protection is advisable on account of the particularly bad gas conditions. To provide such protection, the controller and switches are immersed in oil and the slip rings of the motor suitably enclosed. The entire motor has been enclosed in some instances, a number of such outfits having been built for the Baku Field in Russia.

Operating Data

Fortunately, for the producer who wishes to know the facts, the use of oil well pumping motors has grown to such an extent in this country that practically complete operating data for a great variety of conditions are readily available.

The mere fact that gas is available on a lease does not make the gas engine the logical or most successful type of power equipment for pumping the wells. The cost of operation is usually the determining factor, reinforced by whatever additional advantages the equipment under consideration may have. Some of these additional matters for thought are safety,

(Continued on Page 105)

W. C. Teagle on Standard Dissolution

President of New Jersey Company Talks of Development Since 1911 and Present Situation in Oil World

By D. W. Bowles

Copyright, 1923, by International Magazine Co. Reprinted from Motor by permission

It is popular belief that in spite of the dissolution order of the United States Supreme Court in 1911, the Standard Oil group is still controlled and dominated by the Rockefeller family—that this all powerful influence continues to regulate the price of crude petroleum and petroleum products as it did previous to the famous decision. Since it seemed only fair that the other fellow should have his day in court, I sought for information at the fountain head and obtained an interview with Walter C. Teagle, of the Standard Oil Co. of New Jersey, the parent or holding company in the group of 34 previous to the unscrambling process.

Mr. Teagle seemed not over sanguine that anything he might say would affect the popular belief, but still was willing to tell the oil man's side of the story.

"The Standard Oil Co. of New Jersey is an integral unit occupying a relatively small place in the petroleum business of the country," Mr. Teagle began. "It has no voice in the operations of any other

WALTER C. TEAGLE
President, Standard Oil Co. of New Jersey

companies, whether they are named Standard Oil or not. I cannot make it too emphatic that there is no common policy among the one-time members of the Standard Oil group to which the Standard Oil Co. of New Jersey is a party. There are no interlocking directorates, nor is there any man outside of its board of directors who can dictate to that body.

Popular Notion Exploded

"There is a popular belief that the Standard Oil Companies keep step to the time of a baton waved by a leader with sufficient stock interest in all of the companies to give him a dominating voice in their management. Like most of our favorite fairy stories, this is a fiction pure and simple. The policies and acts of the Standard Oil Co. of New Jersey are formulated and carried through by a board of directors, with no interest in any other company, solely for the best interest as they view it of the business in their charge. There is no telepathic or more tangible means of communication between this company and any other.

"An even more widely accepted fallacy is that there is only a semblance of competition in the oil business. If the Standard Oil Co. of New Jersey tried to fix prices for the industry as it is supposed to do, it would be laughed out of business. If the law of supply and demand ever worked to its inevitable end and regardless of the particular interests of different companies, it is so working today in all branches of the petroleum field. The result is that petroleum products are being placed in the hands of consumers with the smallest addition on top of the lowest possible cost of production of any familiar commodity of commerce. The oil business is easy of entrance and is crowded with enterprising concerns each engaged in a determined, intelligent fight for its share of business.

No Dominant Factor

"It is almost humiliating to have to confess that our company is not the great dominant factor in the petroleum business that popular error makes it, but let the truth be told. Take the supply of crude oil; including our share of that obtained by subsidiaries our production is less than 4 per cent of the country's output. Do you believe for a moment that this amount dictates to the owners of the other 96 per cent? 'No,' says our critic, 'but you might as well own all of the fields because you control their outlets through your pipe lines.' The answer to that is that we own two pipe line companies, one of them running across Pennsylvania and New Jersey and the other operating lines in Oklahoma which connect through intermediate lines with the system owned by the Standard Oil Co. of Louisiana to reach their refinery at Baton Rouge and the seaboard. These pipe lines are of course common carriers.

"The Standard Oil Co. of New Jersey at the time of dissolution for the most part was a refining and marketing company and it still looms large in that field, yet our total refining capacity, according to United States Government figures is 15.79 per cent of the refining capacity of the United States.

"How about the dictation of prices to the trade?

"We operate a delivery service to the domestic trade in a group of six States," was the answer. "In these States we are naturally a very important factor. Our subsidiary, the Louisiana Company, does a marketing business in three Southern States. We had marketing stations and equipment in these States when the dissolution occurred, and we have kept busy ever since trying to hold our own with competition in this rather contracted domestic field.

Disintegration Going On

"There is no body of stockholders even that can or could exercise common control over the disintegrated units of the old organization. The situation in that respect is this: before the dissolution, the stocks of all the companies were held by the Standard Oil Co. of New Jersey. The decree ordered that the stocks of subsidiary companies be distributed pro rata among the shareholders of the parent company. Thus at the moment of distribution all of the 34 companies had identical stock lists, but immediately people began selling shares in different companies and the disintegration has been going on steadily ever since. This, as I understand it, was exactly what the court anticipated in issuing the decree.

"Take our own company, which is the only one I can speak authoritatively about. In 1911 we had 6,078 stockholders. On September 30, 1923, there were 25,021 holders of common stock and nearly 40,000 owners of preferred stock. The largest individual owner of our common stock, who is John D. Rockefeller, Jr., had, when I last inquired, 11.4 per cent of the stock. His father holds no stock in this company, and three of the largest owners are philanthropic institutions. We have on our books nearly 31,000 women, comprising 38 per cent of the common stockholders and 55 per cent of the preferred.

Wide Stock Distribution

"A still wider distribution of our common stock is under way through the workings of an employe subscription plan under which already 13,400 of the workers in the company are setting aside part of their earnings to buy stock. Before the end of next year when the plan expires, we will have added to our common stock list 15,000 names. I cite these figures as showing how far from possible it would be for any individual or associated group of holders to control the policies of this company in the interests of common action with some other company.

"There is a very common misunderstanding as to the profits made in the oil business. As I said before, we are engaged in the hardest kind of competition in every department, producing, manufacturing, and marketing. Under such conditions, the companies that survive and pay a return will be those which are most efficiently operated. There is no latitude for wasteful or loose management. We had an exceptionally good year in 1921 but including that period in a summary of earnings for 1920-1921 and the first half of 1922, the aggregate earnings of the Standard Oil Co. of New Jersey were at the rate of 9.6 per cent on the net assets. That is a very moderate profit for a manufacturing business with the speculative features inseparable from the production of oil. The dividend return to the common stockholders since the dissolution has averaged but 4.4 per cent per annum on the net assets.

How Prices Are Made

"Of course, there is no control on the part of any group of production or prices. Take the town you live in. I don't know what it is, but I will venture to say that there are probably at least half a dozen different oil companies represented there by their products on sale. Furthermore, new stations are going up so fast that some of the old line prominent companies have been pretty much pushed out of sight in many localities by the more recent entries. As a rule, the same price is asked for gasoline at every station in the same locality. This is not because oil companies get together and agree on a price, but competitive conditions will not allow one dealer to maintain a retail price above or below the price of his neighbors for more than a few hours.

"I can best illustrate the true conditions which fix prices by recent actual experiences.

"For some time gasoline prices had been at a level that could hardly have paid anybody in the producing or refining game a profit. They were at rock bottom if they were to be figured on actual costs. Yet the fact remains that producers had more crude oil to sell than the refineries could handle—daily excess of production above consumption for the United States of 30,000 barrels. The result was that those who had too much oil and not enough cash or storage broke the market to get buyers. At once the new level prices established the market at that level so that all producers were again in the same position relatively. A few days passed when word came in to our office late in the afternoon that a prominent competitor had slashed gasoline prices two and three cents a gallon. In view of the general belief that the

(Continued on Page 97)

USES FOR PETROLEUM PRODUCTS ON ROADS OFFER IMMENSE MARKET

By J. E. Pennybacker

Secretary, The Asphalt Association

Before Group Session on Utilization of Petroleum, December 12, Fourth Annual Meeting, American Petroleum Institute.

Asphalt originates in certain petroleums; it is actually held in solution in such petroleums; and when recovered by suitable means it is essentially the same as certain native asphalts. By 1911 the tonnage of asphalt production from domestic petroleums exceeded the importation of lake asphalt. In 1912 and 1913 the importation of large quantities of Mexican oil greatly stimulated the production of petroleum asphalt as this oil was found to be highly asphaltic in character and when subjected to steam distillation gave a much higher yield of asphalt than any domestic petroleum. At the present time considerably more than half of all petroleum asphalt produced in the United States is obtained from Mexican petroleum.

Among the oils which actually contain a considerable amount of asphalt the accompanying petroleum constituents vary greatly in quantity and quality. These constituents play an important part in the behavior and usefulness of the road oil after it has been applied. Thus as between two oils containing an equal amount of asphalt one may readily emulsify with earthy material and water while another will be highly resistant to emulsification or remulsification after the first emulsion has dried out. The latter type will prove much more satisfactory than the former, but just how to make the distinction by specification requirements and just where to draw the line between good and bad after satisfactory tests have been devised is a matter requiring considerable study and experimental service data.

No Real Competitor

In the treatment of earth roads petroleum has practically no competitor at present as tar has been found to be unsatisfactory for such work and other materials are either too expensive, too limited in output or effective for too short a period to be of importance. Development of an almost unlimited field lies therefore in the hands of the petroleum refiner, but such development will be achieved only by a serious effort to better the quality of road oil products so as to give assured service results which appear to the public to be commensurate with the cost. The practice of dumping any old fuel oil product into the road oil market when the one is down and the other up, as has been done in the past,

(Continued on Page 112)

Price Trend Upward in Group 3 Market

Fuel Oil Advances 5 Cents and Gasolines From 1-4 to 1-2 Cent Higher. Other Products Either Firm or Advancing. Refiners Confident

By C. O. Willson

With the generally optimistic feeling which became apparent three weeks ago still prevailing among refiners, the Group 3 refined market during the past week developed additional price strength in several products. The confidence of the refining fraternity continued unshaken despite the efforts of buyers who, in many cases, showed their difference of opinion as to the real status of conditions, by staying entirely out of the market.

The net results of the week's market activities was a 5-cent advance in fuel oils and ¼ to ½ cent advance in gasoline and naphthas. Largely as a reflection of the strength shown in these products, gas oil and blends quotations are also slightly higher. Other products, including natural gasolines which for weeks have shown consistent price reductions, were generally firm.

Briefly summarized, it can be said that for the first time in several months Group 3 has a sellers' market rather than one dominated by the buyers. While the latter are somewhat confused, both as to the present and future of the markets, the former are gaining additional confidence daily. The attitude of both was very apparent during the past week. Just when it appeared that the buyers had their sights adjusted to those of the sellers and were about to get into the market with their delayed purchases, the former advanced their prices and further sight adjustment was necessary. This situation largely applied to the resale material and those large purchases both for domestic and export consumption around which a spot market centers. In the smaller week to week direct transactions between jobber and refiner there was little apparent change in the volume of business.

Change in Conditions

In regard to the gasoline situation there are those who recall three or four futile attempts on the part of sellers to advance their prices during the past year. It will be remembered that, after the brief periods of firm or advancing prices made possible by the arbitrary action of refiners, the market responding to a fundamental situation in regard to supply and demand, continued to slump.

But close students of conditions see in the present situation several important conditions which did not exist during any of the periods mentioned. Basically, they state all refined market developments of a permanent nature go back to the crude situation. In that connection it will be recalled that in last January and Febuary Mid-Continent refiners faced with advancing crude prices raised their gasoline prices. It is now conceded that the crude advance at that time was illtimed, due to the California fields, which had started a production that later flooded the crude markets. The refined market advance failed because the crude price situation was unsound. Later, after crude prices in the Mid-Continent were lowered, the refiners in June again endeavored to advance their gasoline prices. That effort also failed because the California production, aided by the Mid-Continent fields, had reached the flood stage, resulting in a refined market demoralization in which Mid-Continent refiners lost a substantial part of their old marketing territory to this new competition made possible by California crude.

Gradual Improvement

This same overproduction situation in regard to crude continued until a few weeks ago. Those in close touch with the crude situation are authority for the statement that conditions for several weeks have been showing gradual improvement. Refiners, in advancing their prices at this time in contrast to a year ago, are not faced with new fields, such as Long Beach, Santa Fe Springs and Huntington Beach, with their constantly increasing production. In fact, these same authorities as to the crude situation state that so far as the present known production is concerned a steady decline is assured. As has been pointed out in these columns previously, past history of the oil industry leaves no doubt as to the price trend in gasolines and other refined products generally, just as soon as the supply of raw material begins to decline with no new sources apparent, sufficient to meet a constantly increasing demand.

The only "if" in the situation at the present time lies in the bringing in of new fields through the hundreds of wildcat and extension tests being drilled in the United States and the oil producing foreign countries. But the oil industry is always faced with this possible development and it has no market importance.

Adjusting Operations

It is apparent that the Group 3 refiners in increasing numbers are sensing this situation and are adjusting their refinery operations and sales accordingly. The writer found considerable uniformity during the past week in the position taken by the larger refiners of Group 3. Unless the crude situation changes these refiners will conserve their crude supplies and limit their sales of refined products, especially gasolines, to their regular customers, keeping their prices high enough so that to a large extent they are out of the spot market. Practically all of these plants have considerable storage room available for surplus gasoline and crude. If the market situation materializes as they anticipate this storage through advances in the posted price of crude oil and correspondingly higher prices for refined products, will increase in value and furnish the reserve supply needed for the summer season of maximum consumption, a period which under normal conditions also brings a maximum sales return.

During these months of advancing markets there will be probably brief periods of price slumps. Winter and early spring consumption of gasolines is not as uniform as other seasons. Unfavorable weather for a period of a few days or weeks often brings a minimum consumption which forces some plants to give price concessions. These are temporary developments in a strong market situation, however, and do not concern plants which are in a position to ignore them.

The only warning which has been sounded by market observers in the present situation lies in the fear that refiners will advance their prices too rapidly. A certain amount of all refined products has to be moved from week to week and past experience has shown the folly of advancing prices so that this normal movement is stopped.

Gasolines and Naphthas

The general attitude of refiners in regard to gasolines has just been explained. As a result, at this writing there was very little New Navy offered, either for resale or direct to the trade under 7 cents. Some refiners have advanced their prices to 7¼ and 7½ cents and stated they are moving their usual quantities to their regular trade. Buyers for resale could not pay 7 cents and sell at a profit and a majority of them stated they could not pay more than 6½ cents. As a result this class of business was conspicuous by its absence. These buyers do not believe that the rapid price advance of the past three weeks can be maintained and although some have large orders to place they are awaiting a downward reaction.

The situation is even more bullish when January business is discussed. Most large buyers are covered for their December requirements but would be willing to place orders for January delivery. A few refiners, at least, are refusing to quote over January, while others are asking 7¼ to 7½ cents, a price which yet failed to interest the buyers.

Largely the same situation applies as to naphthas and the higher gravity gasolines. Due to the advancing straight run gasoline market more interest is displayed in blends and the movement has improved. There is a good demand for naphthas as blending material. Refiners have advanced their prices, however, from ¼ to ½ cent during the past week on all grades. Due to the relatively high prices for 50-52 grade naphthas an increasing number of blenders are using other grades. Some are buying 56-68 and New Navy gasolines to make a higher gravity blend for which there is a good demand in Canada and the Northern States.

There is comparatively little of the higher gravity gasolines in stocks in Group 3 and refiners are not anxious to dispose of that. During the past week there were export buyers in the market for 64-66, 375 gasoline. At first 8½ cents was offered and then 8¾ cents. A little material was purchased at those prices but at this writing practically all of the refiners have advanced their price to 9 cents and these export buyers are not buying at that quotation. Some domestic shipments are moving at 9 cents, however.

The Sinclair Refining Co. (Eastern division) is reported to have purchased 2,000,000 gallons of 64-66, 375 from Cosden & Co. It is understood that the price was 8¾ cents. Cosden & Co. is one of the companies which for several weeks has been keeping out of the spot market in practically all products except neutrals. It is known that the Sinclair is anxious to buy other 64-66 gasoline for export from North Texas and Group 3 refiners, but the 9-cent quotation temporarily, at least, has caused the company to withdraw from the market. The next few days should determine whether this company and other export buyers are in a position to pay the new prices.

The Carson Petroleum Co. is known to have purchased a small quantity of 68-70, 350-365 gasoline at a price slightly under the present prevailing quotations. There are also several buyers in the market for this product, but refiners have advanced their quotations too fast to permit many sales.

Natural Gasolines and Blends

As previously stated, the demand for blends has improved and due to the increasing cost for blending material, blenders have advanced their prices. Due to the low tank wagon prices in the States of the Middle West, it is to be expected the demand for blends will continue to improve as the straight run prices advance. Jobbers without marginal contracts cannot afford to pay higher prices for gasoline and it is already apparent that some are seeking the cheaper blending material.

This blend situation will obviously improve the demand for natural gasolines.

(Continued on Page 102)

REFINED MARKET BAROMETER

A disposition on the part of an increasing number of refiners to conserve their crude supplies and limit the amount of refined products offered on the spot market was apparent in marketing circles throughout the United States during the past week. As a development of this policy there was a stronger tone in refined markets, especially in gasolines, which were advanced in several refining areas and firm in others. If this plan is continued, further advances are to be expected. Fuel oil was strong west of the Mississippi with no change in the East. More kerosene was available in practically all refining areas with prices, however, still generally firm. Gas oil was strong and prices were advanced where there were any changes. A good demand for neutrals was reported from all sections.

Mid-Continent—Prices were either firm or advancing with fair movement of practically all products. Gasoline prices advanced in all areas except Arkansas, where prices were firm. Several large gasoline buyers in the market but, due to advancing prices, little business has been placed. With the exception of Louisiana, the demand for fuel oil was strong and prices are generally higher than a week ago with comparatively little material available for shipment over the balance of the year. Fuel oil was weak in Louisiana. The kerosene market is spotted with more material generally available except in North Texas where very little is available for spot shipment. Fair movement of distillates with no important price changes. Natural gasolines weak.

Atlantic Seaboard—Market quiet. Both export and domestic demand for gasolines will probably decline but refiners are expected to adjust their refinery operations so that no distress material will be available. Gasoline export and domestic prices are generally firm. Heavy export demand for kerosene has reduced storage. Other products are unchanged.

Pennsylvania—Better tone in market for practically all products with good demand considering the season. Favorable weather aid to gasoline consumption and prices are generally firm. Kerosene movement slower but prices unchanged. Fuel oil and wax strong. Continued heavy demand for lub oils with a shortage of some grades, especially 600 steam refined stocks.

Chicago—Favorable weather aids demand for New Navy gasolines and movement is good considering the season. Practically no change in gasolines prices. Varied opinon among the trade as to whether present firm prices will continue, after winter weather brings a minimum gasoline consumption. Fair demand for kerosene with no general price changes, although a few sellers have advanced their prices ¼ cent. Distillates weak due to warm weather. Fuel oil demand improves.

Gulf Coast—With a large December business already placed, a steady market for Gulf Coast neutrals is assured. Believed that Gulf Coast crude will advance after the first of the year, bringing higher prices for all refined products. Strong demand for the 100, 200 and 300 viscosity products in pale, filtered and red oils. Favorable cotton market an aid to the demand in the South. Gas oil market improved and prices are higher. Fair movement of fuel oils.

Petroleum Industry Needs Salesmanship

Sits by Idly While New Business Worth One Billion Dollars Yearly Awaits Development. House Heating One Source

By Henry L. Doherty
President, Henry L. Doherty & Co.
Before the Fourth Annual Meeting, American Petroleum Institute

Last summer I made the statement at a meeting of the Board of Directors of the American Petroleum Institute that it should be possible for us to market all the oil we are now producing and still increase our revenues $1,000,000,000 a year in excess of what they are now. I have seen no reason to change my mind.

If we can increase our revenues by $1,000,000,000 a year, surely we can afford to devote time and serious thought to the subject and spend some money on a sales campaign. As business men, it is up to us to sell our product wherever it has the greatest value to the user. This is not simply good business but it is in accord with the laws of economics and the laws of true conservation. If there is any other important industry in the country that gives less thought or spends less money collectively for the good of the busines and the development of that business, I don't know what it is.

When the retail customer can occasionally buy gasoline in some parts of the country at less per pound than he would pay for anthracite coal, and can often buy kerosene at less per pound than he would pay for anthracite coal, it requires no great intellect to know there is something wrong about the business. In fact, it is so wrong that the word "wrong" does not express the situation and we have to use the nasty word "rotten."

"There is something wrong with any business or any branch of any business that does not require salesmanship."

Industry's Duty to Sell the Oil

The oil man has talked oil famine for so long and has governed himself accordingly, and the history up to date is that he has fooled himself and nobody else, and his continual expectation of a famine has cost the oil industry billions of dollars. I have talked about an oil famine and have believed in it, but I am going to quit talking about it and I am going to urge everybody else to quit talking about it, for if the continual talk about an oil famine has the effect of causing the oil business to disregard the rules of self preservation, then it is time to let somebody else do the worrying about the shortage.

It is our duty to prevent the devastation of the oil resources of this country to the best of our ability, and when we have done this, then it is up to us to sell whatever oil must come on the market, be that amount much or little, to the customer who can pay the best price.

If oil for railroad use is worth half again as much as for use in the stationary power plant, then it is up to us to sell all the oil we can for railroad use.

If oil is worth still more for ship propulsion than for railroad use, then we should endeavor to sell all the oil we can for ship propulsion.

If it is worth still more for household heating than for ship propulsion, then we should endeavor to sell as much as we can for house-heating purposes.

I have no patience with any industry that is willing to lay down and let the steam roller go over them, nor have I any patience with an industry which devotes all of its time to blaming someone else in the industry for their troubles instead of courageously meeting those troubles. The oil industry is like the man with a leaky roof. When the weather is fair the industry has not the foresight and enterprise to fix the leak and when the weather is bad it can't fix the leak.

This idea that all the troubles of the producer are blamable on the refiner and all the troubles of the refiner are blamable upon the producer or the jobber or somebody else is 90 per cent bunkum. If we could correct all of these troubles to everybody's liking we still would not in times of trouble be able to notice any improvement for the difference would be so small.

There is no need for one branch of the business to take away any of the legitimate profits of any other branch of the business. We are furnishing a commodity that has a much greater value to the user than it costs the user, and the user will not profit but will lose in the long run if every branch of the oil business is not able to maintain itself on a profitable basis.

Property Ownership Rules

We are cursed primarily by the fact that the rules for property ownership are different in the production end of the oil business than in any other business in the world and are likened only to the rulers relating to the ownership of wild animals and birds. This makes it impossible for us to have vast bodies of oil resources located and large bodies of it blocked out that can be drawn upon as the market demands it. The location of an oil pool means under present conditions that it must be immediately forced upon the market whether the market can take it or not. If there is no market for other mineral products they can be left in the ground. This is not true with oil.

We are continually vibrating back and forth between an overproduction of oil and the threat of a shortage of oil with no adequate resources on which to draw to stabilize either our supplies or our prices. Our customers are alarmed at times for fear they will not have a supply and are continually irritated and annoyed by wide fluctuations in price. The man on the street compares our business with every other branch of business and concludes that such fluctuations in price can only result from either mismanagement or manipulation.

Our ground resources of oil are drained as rapidly as physical conditions will permit regardless of whether the markets will take the oil or not, and we have absolutely no ground supplies blocked out that can be drawn upon at will, as it is the case with all other mineral products, and this in spite of the fact that our ground storage of oil costs more and leads to greater waste than any other mineral product.

We are burning now every day more than 1,000,000 barrels of oil much of which is sold for purposes for which coal —which is more or less abundant— would be equally available and this 1,000,000 barrels of daily consumption used in many cases in strict competition with coal offers the elastic factor which warrants us in developing all of the superior uses of oil where it has a greater value over other forms of fuel.

Need Less Wind, More Work

I for one am tired of seeing a period of overproduction occur and then have everybody sit down and wait for something to happen. There may be a special Providence for old women, little children and drunken men, but there seems to be none for the oil business. What we need is less wind and more work, less talk and more thought, less bellyaching and more brain effort, less bile and more guts.

The American Petroleum Institute has recently appointed two important committees, one to consider changes in our methods of producing oil so that the evils now existing in this branch of our business can be eliminated and especially so that oil will not be forced on the market beyond the ability of the market to take it. The other important committee relates to the matter of utilization of petroleum products. In spite of the fact that no one openly challenges my statement that we should be able to sell all the oil we are now producing and receive a revenue of at least $1,000,000,000 a year in excess of what we are now receiving, nevertheless, the leaders in the business feel that the industry would not be willing to spend even a single penny of each $100 of this huge opportunity. Many of the industries much smaller than the oil industry and with relatively much smaller resources contribute and spend collectively, aside from that each company spends in the different sales departments, hundreds of thousands of dollars every year—yes, in some cases millions of dollars every year. The petroleum industry of giant size and with unlimited opportunity spends next to nothing.

My fellow members of the Committee on Utilization of Petroleum Products advised against even asking the industry for an appropriation of $100,000 a year to spend on this work and felt that the industry would not listen sympathetically to the request for more than $50,000.

One per cent of $1,000,000,000 a year would be $10,000,000 and $100,000 a year would only be one one-hundredth of 1 per cent or $1 for each $10,000, or one penny for each $100.

Gas Industry Progressive

There are many industries where no one company can afford to develop new uses for the product of the industry. I have used frequently the distinction between the gas company selling gas for, say, industrial purposes and an oil company selling oil for industrial purposes. I happen to be in both the gas business and the oil business. In the gas business we can afford to maintain a highly efficient and therefore an expensive sales organization. We can afford to maintain a highly efficient and therefore expensive engineering organization for the purpose of developing new uses and new applications for gas. We can afford to not only convert the manufacturer by the work of our salesmen to the use of gas as against some other fuel, but we can afford to have our engineering organization design, build and supervise the initial operation of special furnaces designed by us to suit the needs of our customers. We can afford to do this because once this customer is connected to our gas mains he has no other source from which to buy his fuel.

I have shown many of them in the oil business that we find no difficulty in selling gas at a price which would be equivalent to from 15 cents to 30 cents a gallon for fuel oil and there is no difficulty in showing that much more oil could be sold than gas, but no one company can furnish the salesmanship and the engineering to develop these uses and applications for oil for, as soon as the customer is in position to shop with every other oil company in the country, and whether he shops for oil or not, a good many of the other oil companies will be around to try and sell him oil; therefore, this work must be done by the industry as a whole and cannot be done on any large scale by any individual company.

Other Organizations Active

Taking what would be perhaps a representative, although a very conservative, figure, as the amount expended by many of the gas companies and applying this expenditure to the oil business for the entire country, it would amount to considerably more than $10,000,000 a year, and it pays, and this an indication of what it would pay the oil companies to do.

One of the cement organizations, rep-

(Continued on Page 107)

ILLINOIS MARKETERS CONFUSED ABOUT JUST WHO IS INDEPENDENT

By Ralph T. Baker

PEORIA, Ill., Dec. 11.—"The day is close at hand when no gravity feed fuel oil burners can be placed in any of the large cities of the United States," was the statement of John C. Gamber, Illinois State fire marshal, before the third annual meeting of the Illinois Petroleum Marketers' Association in the Jefferson Hotel, Peoria, today. He told of the conflict between the national fire insurance bodies and State and city authorities which creates a confused condition relative to the storage of petroleum products. He spoke at length upon the requirements for placing storage, particularly regarding the distance from adjoining property lines, and dykes about storage tanks. He admitted that the growth of fuel oil burning presented a problem to the oil jobber.

J. L. Murray of Bloomington was re-elected president for the third successive time. F. A. Muench of Carlinville was elected vice president and E. R. Kennedy secretary-treasurer. Nine directors were elected.

Clifford Older, chief engineer of the Illinois division of highways, pointed out the tremendous saving to the motorist through the construction of hard surface roads. He predicted the construction of 1,000 miles of new surfaced road in Illinois during the coming year.

James A. Gilmore, secretary of the National Petroleum Marketers' Association, presented the national advertising campaign and universal coupon book exchange plan fostered by his association. He told of the favorable action taken by the Wisconsin jobbers. The association passed a resolution advising the officers and trustees of the National Petroleum Marketers' Association that it favored a campaign of publicity through the Sunday metropolitan papers advising the motoring public that the independent jobbers, their resale agents and fiilling stations were prepared to furnish coupon books good for supplies any place where the independent emblem was displayed.

The members could not agree upon the method for designating standard or independent companies as a result of recent mergers and present confused status of various oil companies.

The Oil and Gas Journal
PRODUCING REFINING MARKETING

Published Weekly by
THE PETROLEUM PUBLISHING COMPANY
114-116 West Second Street
TULSA, OKLA.

Established as an International Publication in 1910 by Patrick C. Boyle

President - - - - - - - - - - - - Frank T. Lauinger
Vice President and General Manager - - Robert W. Egan
Treasurer - - - - - - - - - - - - - H. J. Bryan
Secretary - - - - - - - - - - - - - W. T. Bryan
Editor - - - - - - - - - - - - - - James McIntyre
Associate Editor - - - - - - - - - Andrew M. Rowley
Associate Editor - - - - - - - - - - W. T. Anderson
Associate Editor - - - - - - - - - - C. O. Willson
Advertising Manager - - - - - - - - Clarence Morris
Circulation Manager - - - - - - - - J. P. Mulkern

TERMS OF SUBSCRIPTION
(By Mail, Postage Prepaid)

Single copies - - - - - - - - - - - - - - - $ .15
Three months - - - - - - - - - - - - - - - $2.00
Six months - - - - - - - - - - - - - - - - $3.00
One year (in United States) - - - - - - - - - $6.00
One year (in Canada) - - - - - - - - - - - $7.00
One year (foreign countries) - - - - - - - - - $7.00

DISTRICT ADVERTISING OFFICES
NEW YORK, 30 Church Street
CHICAGO, ILL., 1328 Peoples Gas Bldg.

ADVERTISING RATES ON APPLICATION
Remittances by Checks, Drafts Express or Postal Money Orders should be made payable to
The Petroleum Publishing Company
Cable address, "Oilgasnal"
Telephones: Osage 1930—Osage 7538

MEMBER AUDIT BUREAU OF CIRCULATION

A PLAIN SPOKEN PRESIDENT

The country's response to the courageous candor of President Coolidge happily rebukes the cynical comment that his first message to Congress was "economically sound but politically unsound." The assumption that the American people prefer to be humbugged by fence-straddling politicians and that simple honesty of utterance dooms a candidate to defeat is as untrue as it is unflattering. Time and again the public has risen splendidly to support a man who told them truths that were for the moment unpalatable but which he was able to prove.

His endorsement of Secretary Mellon's tax reduction proposals is epitomized in the warning to Congress that "to neglect it, to postpone it, to obstruct it by unsound proposals is to become unworthy of public confidence and untrue to public trust." His declaration that of all services Congress can render the country this one is paramount exactly reflects the mind of the nation. No equivocation or evasion can obscure the fact that nothing will so much encourage the development of business and general prosperity as lifting the tax burdens that penalize, where they do not prohibit, enterprise. These burdens bear as heavily proportionately upon every individual doing business as upon the greatest corporations, probably more heavily. Men cannot be expected to do their utmost when their earnings are taken from them and squandered under the guise of Government.

It is of interest to the oil industry to note that the President is steadfastly against Government operation or ownership of the coal mines. Leaders in our own industry who have been so fearful of cooperation lest they be accused of violating the anti-trust laws should notice particularly that Mr. Coolidge specifically suggests such cooperation in the coal industry and that he urges railroad consolidations and farm organization. There will be no "running amuck" against business under his administration which will not fear to say or do the right thing because it may be misinterpreted by opponents. Where cooperation within an industry is necessary for the greatest national results the Coolidge administration will evidently not be afraid to approve and even to encourage it.

CAN THE OIL BUSINESS BE STABILIZED?

Speakers, both from within and without the industry, stressed the necessity of stabilizing the oil business before the fourth annual meeting of the American Petroleum Institute at St. Louis. Present and prospective users of fuel oil, the bulk product of petroleum, were especially vigorous in framing an indictment of indifference to which leaders of the oil industry have already pleaded guilty.

It is unfortunately characteristic that the transitions from the depths of depression to the peaks of optimism, from engulfment in a flood of surplus oil to predictions of actual exhaustion, should take place almost overnight. The effect, deplorable upon the oil industry itself, is no less damaging to its customers. Surely there should be sufficient executive ability and control somewhere within the nation's second largest industry to cope with and correct this recurring fluctuation.

A representative of the manufacturers of oil burners, invited to conference with the institute, told very bluntly how he and his fellows who were making a market for oil as fuel were obstructed and actually rebuffed by oil men from whom they had every right to expect cooperation as profitable customers. A representative of the oil burning railroads declared the transportation companies were hesitating in adopting oil as a fuel because they can receive no assurance of a supply of oil for a period sufficient to justify the cost of changing motive power from coal to oil, because they are offered only short contracts and because of the fluctuations in the price of oil.

Yet the industry is just emerging from the worst depression in its history caused by inability to market its surplus product. Had the use of fuel oil been encouraged, as the pioneers encouraged the use of kerosene, this year's flood of crude would have been welcomed instead of being feared.

The danger now is that, with the passing of the surplus and the talk of a possible shortage in supply, the prospective consumers of fuel oil, whether for railroads or house heating, will again be waved aside—until another period of overproduction disorganizes the oil business. The history of the industry, it must be remembered, has been a succession of just such peaks and valleys.

That is precisely the point too often and too quickly forgotten when the turn upward is seen. These violent fluctuations are attributed to the vagaries of Nature, the sudden discovery of new pools beyond human guesswork. But the assumption that their effects are likewise beyond human control is the weak plea of incompetence.

Adjustment of fat and lean years to a moderate level has been a known possibility since the days of Joseph. Only the most reckless of individuals fails to gauge his expenditures on some such basis. It is well nigh incomprehensible that a gigantic industry representing billions of investment, assured of a world-wide and steadily increasing market, should permit its affairs to be so muddled that it is either overwhelmed by a surplus it does not know what to do with or does not know where to turn for its supplies.

Much has been said of the keenly competitive conditions of the oil business. If this chaos in supply and prices is the effect of such competition the consumer may well wish for cooperation instead. He, as well as those within the industry, suffers from these unnecessary fluctuations. If he uses gasoline he finds himself paying a price range that compels the sternest economy or encourages the utmost waste. If he uses or would like to use fuel oil he is harassed by doubts about permanence of supply or price. And, in either case, he lays the fault where it belongs, at the door of the oil industry.

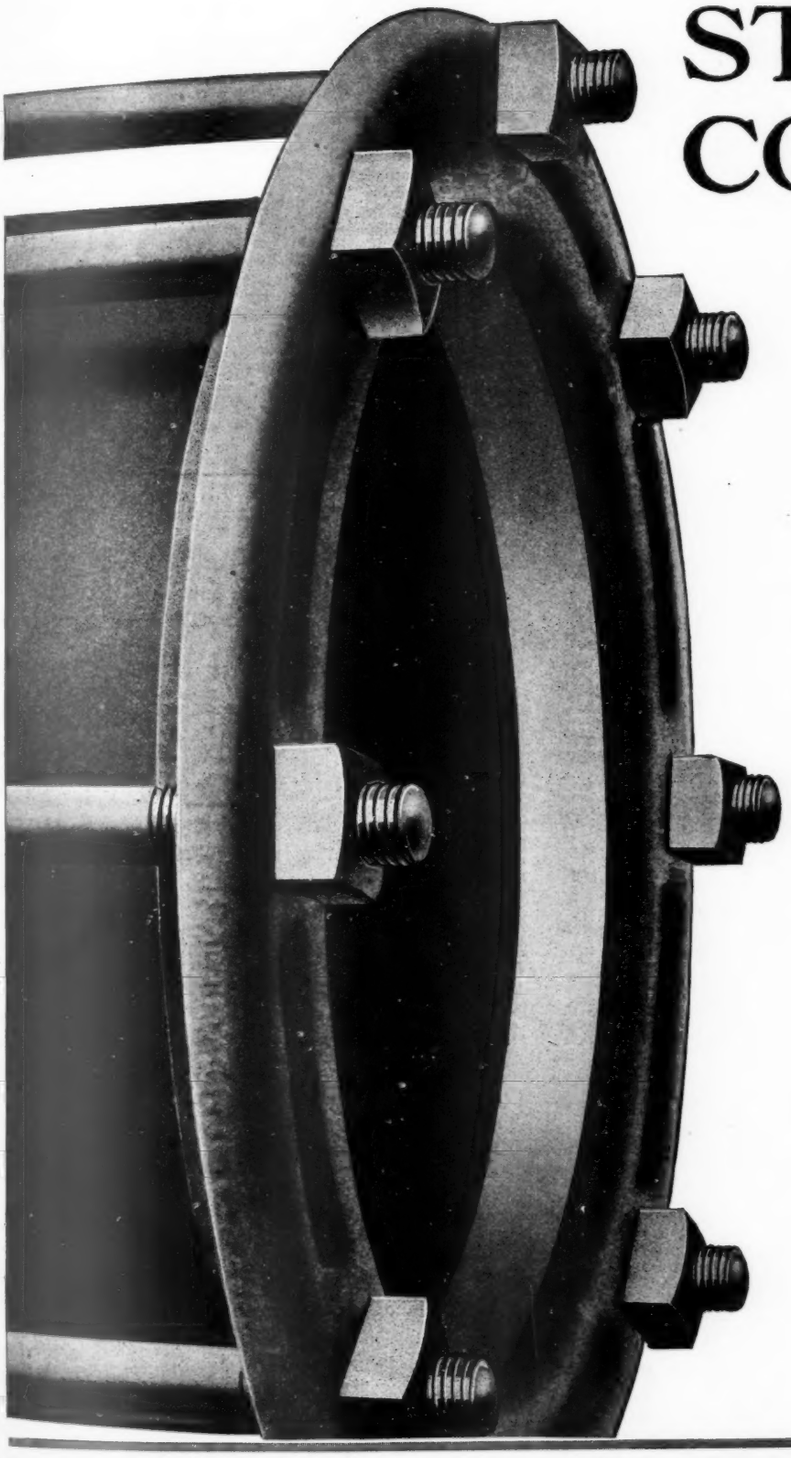
The spokesman for the railroads at St. Louis said plainly that fluctuations in stocks and prices have been too great and declared that steps must be taken by the petroleum industry to maintain fuel stocks in order to insure a constant source of supply and to promote a system whereby prices will be stabilized. Let the oil industry ask itself what may be the effect if consumers of gasoline get the same idea and begin demanding the maintenance of a reserve that will stabilize prices. If they got behind a campaign for that sort of control, which ought to be furnished by the industry itself, think what the politicians might do with it.

These discussions are not academic. They deal with the most practical matters confronting the industry, problems that are forcing themselves upon attention as in these addresses at the institute at St. Louis. They demand an answer in action, and can not be met or overcome by mere adoption of resolutions or apologetic explanations that the remedies urged are impossible.

Stabilization has not been found impossible in other great industries and there is nothing inherent in the petroleum industry which prevents it from taking advantage of one period's surplus to provide for the shortcoming of another. Even considered as a matter of profit and loss the stabilization of prices would be preferable in assured revenue to the producer and in economy to the purchaser. Periods of extreme profits or extreme losses are uneconomic both to the producing industry and to all others that need its products.

If the scarcity of oil so often prophesied arrives, force of circumstances will compel a policy of stabilization that can more easily and profitably be adopted now if the leaders in the industry have the courage to undertake it.

DRESSER



STEEL PIPE COUPLINGS

The Standard Joint

Dresser Steel Pipe Coupling Style 38 has been adopted generally in all fields for either high or low pressure work. It is used on every type of Plain End Steel Pipe and Plain End Cast Iron Pipe in all sizes from ½" up.

DRESSER · BRADFORD, PA.

S·R·DRESSER MFG·CO·
BRADFORD PA·

DRESSER-COUPLINGS-DOMINATE

Oil Securities Show Steady Undertone

Practically All Gains Held. Stock Market Now Marking Time Awaiting Further Developments in the Petroleum Situation

By N. O. Fanning
Room 525 No. 30 Church St., New York

NEW YORK, Dec. 10.—Oil securities showed very little change in prices during improvement has already taken place in the past week. The undertone was steady and practically all gains which had been made prior to this week were held. The Oil and Gas Journal's weekly average, which reached 48.66 on December 4, shows the large extent of the advance in oil stock prices over the low prices of the year. Whether the advance has discounted the expected recovery in the oil business or not is the question being asked in financial circles. As yet there has been no change in crude oil prices, but an advance is anticipated before the close of December.

It is pointed out, however, that the improvement in the oil securities market has not been based entirely on expectations of future recovery. A considerable improvement ha s already taken place in oil affairs because of the decline in crude oil production in the Powell Field and in California. This decline, at least so far as Powell is concerned, has been more rapid than was expected.

It is natural to believe that the stock market, so far as oil securities are concerned, is now "marking time," awaiting new developments in the oil situation. It is yet impossible to tell how far the decline in crude oil production is going. The answer to this question will decide how soon the balance in oil between demand and supply will be reached.

The optimism in oil based on the decline in crude oil production is believed to be exceptionally well founded, inasmuch as with winter approaching there is not likely to be great drilling activity even if there is an advance in crude oil prices, until next spring. This is looked upon as lessening chances of opening up another big pool in the near future such as Powell.

Standard of New Jersey

One feature of the oil securities market during the last month or two was the sluggishness shown by the common stock of the Standard Oil Co. of New Jersey. There are approximately 20,000,000 shares of this stock outstanding. For this reason, movements in the stock are apt to be less pronounced. However, comparing the present price of this stock with prices of other Standard Oil units shows that Standard Oil of New Jersey stock has hung back. At $36 per share, its present price, it is approximately 5 points above this year's low. The gains in Standard Oil and independent stocks have been as follows:

	Pres.	Year's Low	Gain	Pct.
S. O. of N. Y.	42	35½	6½	18
S. O. of Ind.	58¾	49¼	9½	19
S. O. of Cal.	56	47⅛	8⅞	18
S. O. of N. J.	35⅞	30⅞	5	16
Vacuum Oil	53	40	13	32
Gulf Oil	58	46¾	12¼	26
The Texas Co.	42	34⅝	7⅜	21
Cosden & Co.	32	22⅝	9¼	40
Pacific Oil	42⅝	31⅛	8⅞	28
Middle States Oil	5¼	3⅛	1⅝	50

Of all the stocks given it will be noted that the Standard Oil Co. of New Jersey common shows the smallest percentage of gain. The table is particularly interesting as showing the marked variation in the advances scored by the different securities listed. Gains in Standard Oil issues range from 16 per cent to 32 per cent, while those in the independents range from 21 per cent to 50 per cent.

Regarding Standard Oil of New Jersey common, particularly, it might be argued that at $36 per share, the stock gives at the present rate of dividends ($1 per share per year, par $25) a return of only 2.77 per cent on the investment. However, the stock has a large equity behind it, and at $36 per share and $116 for the preferred, its securities are selling on the basis of $952,000,000, while its assets, conservatively figured, amount to more than $1,150,000,000.

A strong feature in the oil group has been the stock of the National Supply Co., which reached a high of 67⅞, against a low since it was placed on the Stock Exchange of 54. This is believed to reflect an improvement in the oil business, especially from the point of view of the credit and equipment situations.

South American Oils

Another important development in the oil securities market is the strength in the stocks of oil companies operating in Colombia and Venezuela. International Petroleum Co., Ltd., and Maracaibo Oil Exploration, reached new high prices on the upward swing, and show pronounced strength, while other oil stocks are "marking time."

The activity and strength in these issues reflects the belief that 1924 will witness further important development of the oil fields of Colombia and Venezuela, based on the anticipation of higher crude oil prices and a scarcity of crude in the United States.

Mergers Reported

Coincident with the rapid advance in the prices of stocks of the principal Mid-Continent oil companies, reports have been circulated to the effect that Prairie Oil & Gas Co. intends to extend its refining and marketing operations through further acquisitions, and that Ohio Oil also plans to branch out from crude oil producing and purchasing into refining and marketing. Such rumors are not entirely out of reason, yet should be taken with a grain of salt until confirmed. Reports of the kind are often spread by stock market manipulators who are anxious to see advances in the price of stocks in which they are interested.

The British American Oil Co. declared an extra dividend of 2 per cent on the capital stock in addition to the regular quarterly payment of the same amount. Both dividends are payable January 2 to stockholders of record December 22.

Directors of the Royal Dutch Co. declared an interim dividend of 10 per cent in cash, payable January 16, 1924.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

No.	Stock	Par	§Dividend Rate	Closing Quotations Dec. 11	Dec. 4	Range 1923 High	Low
1.	Associated Oil	25	6	26½	*26	27⅛	24⅛
2.	Atlantic Refining, common	100	4	120	114⅞	160	98¾
3.	Barnsdall "A"	25	..	15¼	16½	35	9⅞
4.	Caddo Central Oil	..	..	2⅝	*2	9⅛	1⅛
5.	California Petroleum, common	25	7	24¼	23⅛	29⅛	17⅛
6.	Cosden & Co., common	..	..	33¼	31	62½	22⅜
7.	General American Tank	..	†3	*45	45	71⅞	40
8.	General Asphalt	100	..	34	36	54	23
9.	Houston Oil	100	..	60¼	61⅞	78	40¾
10.	Independent Oil & Gas	10	..	6¼	6	11¼	3⅜
11.	Indiahoma Refining	25	..	2¼	2⅛	9	1¼
12.	Indian Refining	10	..	4	*5	8⅛	4
13.	Invincible Oil	50	..	10⅜	10⅜	19¼	7⅛
14.	Maracaibo	..	..	26	26¾	37¼	16
15.	Mariand Oil	..	..	34⅜	32⅞	59⅝	18⅛
16.	Mexican Seaboard	..	..	12⅝	14⅛	19¾	5⅜
17.	Middle States Oil	10	..	5¼	5⅛	12¼	4⅜
18.	National Supply	50	6	67¼	66⅝	68	54
19.	Pacific Oil	..	†2	43¼	42	48⅞	31½
20.	Pan-American, common	50	16	61¼	61⅝	93½	53
21.	Panhandle Prod. & Ref.	..	..	*2	*2	6¼	1¼
22.	Phillips Petroleum	..	†2	33	32⅝	69⅝	19⅜
23.	Pierce Oil, common	25	..	2¼	2⅜	6	1⅛
24.	Producers & Refiners	50	..	26	26½	58¼	17⅛
25.	Pure Oil Co., common	25	6	18¾	19⅛	32	16¼
26.	Royal Dutch, N. Y., sh	13.40	2.62	50	51⅝	56⅛	40½
27.	Shell Transport	10	x92½	*33½	*34	41¼	29½
28.	Shell Union, common	..	†1	15⅝	16¼	19¼	12⅜
29.	Simms Pet.	10	..	11⅝	10¼	16⅜	6½
30.	Sinclair Consolidated, common	..	†2	23¼	23	39⅜	16
31.	Skelly Oil	25	..	22⅞	21⅞	35	12½
32.	Standard of California	25	8	56⅝	55⅝	64⅛	47½
33.	Standard Oil of N. J.	25	4	35½	35⅜	44¼	30⅞
34.	Standard of New Jersey, pfd	100	7	116¾	116⅜	118¼	114¾
35.	Superior Oil	..	..	2⅜	2¼	6¾	2
36.	The Texas Co.	25	12	40⅞	41⅞	52⅞	34⅝
37.	Texas & Pacific Coal & Oil	10	..	9	9¼	24⅜	5½
38.	Tide Water Oil	100	4	113	115½	144	94
39.	Transcontinental	..	..	2⅝	3	14½	1¼
40.	Union Tank, preferred	100	7	*107	*108	114	106
41.	White Eagle Oil & Ref.	..	2¼	24½	22⅝	30⅝	20½
	Standard Oil Stocks						
42.	Anglo-American Oil	5	15	14⅞	15⅝	19¾	13½
43.	Borne Scrymser	100	12	*145	*140	153	110
44.	Buckeye Pipe Line	50	14	73	*73	94	69
45.	Chesebrough Mfng., com.	100	14	*230	*230	340	205
46.	Continental Oil	25	8	*42¼	41	50	32½
47.	Crescent Pipe Line	25	..	*14½	*15	25	15
48.	Cumberland Pipe Line	100	10	105½	106¾	117	80
49.	Eureka Pipe Line	100	8	*98	103	117¼	87
50.	Galena-Signal, common	100	4	68½	66½	78	55
51.	Humble Oil & Ref.	25	4.8	36¼	*34¾	41	28¼
52.	Illinois Pipe Line	100	16	*135	137¼	171	115
53.	Imperial Oil, Ltd.	25	16	196	102½	123	92
54.	Indiana Pipe Line	50	16	*84	*80	103	81
55.	Intl. Pet. Co.	..	x50	16¼	16	24¾	13¼
56.	Magnolia Pet.	100	4.5	138½	*139	166	123
57.	National Transit	12.50	⅞	*22⅝	*22	29	19½
58.	New York Transit	100	10	77¼	78	138	70
59.	Northern Pipe Line	100	25	96½	*99	111	96
60.	Ohio Oil Co.	25	4	66½	66½	85⅝	48¾
61.	Penn-Mex Fuel	25	..	*21	21	28⅝	10½
62.	Prairie Oil & Gas	100	8	220	220	272	152
63.	Prairie Pipe Line	100	8	98½	96½	117	93
64.	Solar Refining Co.	100	15	*165	*170	212	161
65.	Southern Pipe Line	100	16	*91	92½	116	87
66.	South Penn Oil	100	..	123	128	196	100
67.	South West Pa. Line	100	8	*75	*77	89	66
68.	Standard of Indiana	25	10	59	58⅞	69⅞	49¼
69.	Standard of Kansas	25	8	40	41	56¼	36½
70.	Standard of Kentucky	25	16	99½	97	109½	76
71.	Standard of Nebraska	100	20	220	215	280	186
72.	Standard Oil of N. Y.	25	5.6	41½	42¼	49⅝	35½
73.	Standard of Ohio, common	100	10	280	279	317	270
74.	Swan & Finch	100	..	35	*29	38	21½
75.	Vacuum Oil	25	10	52⅝	53	55½	40
76.	Washington Oil	10	..	*22⅝	*22	28	20¼
	Miscellaneous Stocks						
77.	Cities Service, banker's shares	..	‡21	*13½	14	18½	12⅜
78.	Gulf Oil Corp. of Pa.	25	6	58	57⅛	68¼	45⅜

*Bid, no sales. †In dollars. ‡6 per cent in cash and 15 per cent stock dividend declared; now being paid in scrip. §The figures carried in this column are kept up-to-date as far as possible but are not guaranteed. xCents per share.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange weekly was as follows:

Dec. 11	49.27	Oct. 30	41.66	Sept. 18		41.43
Dec. 4	48.66	Oct. 23	42.42	Sept. 11		44.78
Nov. 27	47.74	Oct. 16	42.80	Sept. 4		44.06
Nov. 20	45.36	Oct. 9	43.29	Aug. 28		44.18
Nov. 13	43.84	Oct. 2	43.53	Aug. 14		43.39
Nov. 6	42.60	Sept. 25	42.48	Aug. 7		43.87

COURT ORDERS SALE SOUTHERN OIL CORP.

KANSAS CITY, Mo., Dec. 11.—Judge Albert L. Reeves of Federal court here yesterday ordered the sale of the property in this district belonging to the Southern Oil Corp. J. W. Woodford, ancillary receiver of the corporation in the Oklahoma district, was appointed special master to conduct the sale. E. B. Black and N. T. Veatch, Jr., engineers, were appointed by the court to appraise the properties of the corporation.

In the hearing, Mr. Woodford stated that the corporation had been losing money ever since it was placed in the hands of a receiver in December, 1922. He stated that the Oklahoma and Texas properties of the corporation would be sold in the near future. The Oklahoma properties include two refineries, one located at Walters and the other at Yale. Both have been closed down for some time. The properties in this section include two filling station sites, a compounding plant, a bulk station, automotive equipment and office furniture.

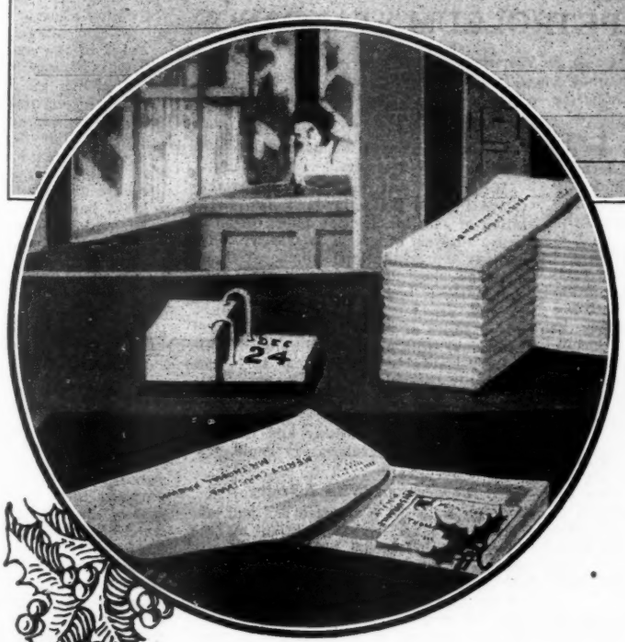
AMDYCO IS APPROVED

Amdyco, the new stabilizer for foam type fire extinguishing systems developed by the American Dyewood Co. of New York, has been formally approved by the Underwriters Laboratories, Inc., after extensive tests on all types of oil fires. Greater persistency, increased volume of expansion and a much easier flow are claimed for the foam blanket formed by this new product, and no indications of decomposition were found by the laboratories. Amdyco is the result of experiments which have been carried on by the company's chemists for some time, in cooperation with several large oil companies in the East and Middle West.

N. J. STANDARD DENIES

The Standard Oil Co. of New Jersey states there is no truth to reports that it is to take over a number of independent oil companies.

It's not too late - - - - Wire today



and you can announce Group Insurance as a Christmas Gift to employees and their families.

Need Home Burner for Low Gravity Oil

Cooperation Between Producers, Manufacturers and Public Will Open Broad Field With Benefits for All Concerned

By G. I. Sweney
President, Sweney Gasoline & Oil Co.
Before Group Session on Utilization of Petroleum, December 12. Fourth Annual Meeting, American Petroleum Institute

Any consideration of the business and economic tendencies of the present age in this country, at least, must give full recognition of the fact that there is and has been for several years a mental as well as a material change in the attitude of all classes of our people. The luxuries of yesterday have become the necessities of today. Humanity is progressing in every phase of its activities, and all modern business is devoting more and more of its attention to catering to the insistent demand for more comfort, quicker transportation and greater safety.

And so when we consider "What the Oil Burner and the Oil Industries Can Do for Each Other and the Public" we should bear in mind that we have a demand to supply—one which has great potentialities and which is eagerly awaiting stabilization, and further improvements in construction of equipment and of fuel and service.

Consumption of Fuel Oil

I would divide the consumption of fuel oils into three groups: viz., (1) Industrial fuel; (2) Fuel for public buildings, and (3) Domestic fuel.

To a certain extent the use of oil in industrial plants and by railroads and steamships is fairly well developed, and is being successfully handled, and is absorbing that portion of the crude for which there is little other use, and from an economic standpoint is working its way without hindrance and with satisfaction. Therefore, I shall give scant attention to this phase of my subject.

Of the second group, it may be said that fewer problems present themselves for solution than in the third. group Hotels and apartment houses, office buildings, schools and other public buildings require comparatively large heating units, take larger deliveries of fuel, and can be operated at a lower expense and on a more business like basis than can the home. Inasmuch as the large unit can stand the cost of purchasing the fuel, lower grades of oil can be utilized than in the detached house. In many cases, the larger units have storage facilities in which oils with moderate cold test can be used and in which the oil will keep limpid without preheating. For such service—which is confined almost entirely to cities, the problem is not difficult, but first, consideration must be given to the expense account, and the successful oil operator will work out all possible economies of operation of plant, transportation and delivery by the use of adequate and properly equipped storage, by the use of motor trucks of large capacity and suitable pipe fittings and with the help of the customer convenient and accessible arrangement of domestic storage. The oil man, cooperating with the burner manufacturer and the consumer can do much to prevent (or to have revised) rules and ordinances inconsistent with the requirements of the consumer, but which will still give the public the proper and necessary protection from fire loss. Nearly all the obnoxious laws, now in effect, are the result of lack of information as to the actual risks and facts based on experience.

Problems of Domestic Heating

While the use of oil for domestic or home heating possesses greater possibilities for further development than do the other two groups mentioned, it also carries with it greater obstacles, and it is here, it seems to me that a closer coordination of effort of the oil and burner industries is necessary. Expense of oil burning equipment and oil may not be important after once installed and in use because of the greater comforts enjoyed, but the average householder should not be misled when negotiating for equipment as to what his heating expense may be. I have found an almost universal tendency among oil burner salesmen to make prospective purchaser believe that the very cheapest grade of oil can be successfully used, figures as to oil costs being used which are actually carload costs at refinery (no mention being made of freight, cost of delivery or profit for the handler) so that the oil marketer is constantly on the defensive as to his price and the quality of oil necessary.

No matter how near perfect may be the machine for burning oil, the matter of first importance is the cold test of the oil. Without preheating arrangement in consumers' storage tanks, the oil must run from storage exposed during the winter to low temperature and must still flow to the burner. Preheating is too expensive for the average household, and insurance regulations and common consideration of safety prevent storage of more than limited quantities in warm basements, so that oil must be supplied which has a cold test not higher than 10 or 15 degrees above zero except in climates where there are no low temperatures.

Of course importance is freedom of the oil from sediment. If feed lines of burners clog and the oil is not delivered to the fire box, the whole proposition falls.

A flash point of around 200 degrees F. is desirable as a caution against fire or explosion.

Burners are being built which will handle oils of as low as 18 degrees gravity Baume, but I have become convinced that the only practical grades are what are known as overhead fuels, that is distillates ranging from 32 to 38 gravity, having the requisite cold test, freedom from sediment and flash. The efficiency of liquid fuel is so well recognized when compared to coal that I consider a discussion of the heat value of minor importance.

The oil should be comparatively free from sulphur. A disagreeable odor from combustion of oil will form a great resistance to its use.

Dependable and prompt service is of utmost importance. No business can long stand up under the strain of complaints due to lack of service. The business of delivering oil must be worked out carefully and systematically as possible and deliveries made with neatness and dispatch.

We are handling a "back door commodity" and the reputation of many an oil merchant has been ruined around the dinner table or across the bridge table by his failure to keep some customer supplied, particularly at the time when that customer had forgotten to anticipate his requirements.

Care in Delivery

Care in delivery is essential. A little oil spilled on driveways, shrubbery or lawns, will bring a storm of complaint. In my business we have provided drivers with a canvas sheet to be placed on the driveway or lawn so that no oil will be spilled on the premises. It would be of great assistance to the oil industry if burner manufacturers could prevail upon customers to install intake pipes at the street curb, or at least so that the intake could be reached without going on to the driveway or premises of the consumer. A heavy truck on a concrete drive is liable to break up that drive, and then comes complaint and perhaps an expensive replacement.

Except in large centers, the oil merchant can hardly afford to handle furnace oil exclusively. Therefore, he may properly figure that the furnace oil business is merely an added line to the already existing business of selling gasoline, kerosene and lubricating oils. But, nevertheless, his equipment and service must be adequate else he will injure his business in the established lines by failure in the new one. He must, of course, provide storage sufficient to serve beyond question those who are dependent on him for their comfort. Happily such storage can be used for his other departments in the summer when the demand for fuel is limited.

Conservative business management is just as essential in the oil business as in any other. The experienced oil operator will make a good share of his profit by keeping out of trouble—by avoidance of starting something he is unable to finish—by promising only what he can do.

Some oil dealers sell and install oil burners. Is that good business? Work the proposition out before you tackle it. What about assuming responsibility for the successful operation of the burner itself? How about the competition of dealers selling other styles of burners, which competition will be against your oil also?

Think of the cost of selling, installing and maintaining those burners? Can you make enough money on the burner so that it will pay its way, without robbing your margin on the oil? Have you conditions peculiar to your own situation? Are they in favor of your selling burners? Think—question yourself.

I have always thought a man is under a great handicap when he tries to deal in something he knows little about. After all, experience and knowledge are important factors in any business. Therefore, I like to believe that if I am an oil dealer, I should sell oil and leave other articles of trade to someone whose regular business is selling those articles.

The Future

Looking into the future, it seems safe to assume that for many years to come the demand for gasoline will keep pace with or exceed the supply. A similar vision of the use of the heavier portions of crude oil (let us say below 28 degrees gravity) also indicates that for industrial purposes there will be no oversupply.

How about that portion of the crude which maw be adapted to heating the home. May not its use be developed to a point where it will occupy a position of relative importance with gasoline? May not a price be obtained sufficient to pay all costs plus a reasonable profit. Will not the consumer be the real beneficiary through added comfort and convenience? The burner people may reap a rich harvest—every home is a prospect, but none of us can succeed unless we each contribute our full measure of service and effort—striving fairly one with the other in a broad gauge spirit—a carefully thought out plan—and a strict adherence to clean business ideals.

SOCIETY FOR TESTING MATERIALS STUDYING PETROLEUM STANDARDS

By C. L. Warwick
Secretary, American Society for Testing Materials
Before Group Meeting on Standardization of Oil Drilling Methods, Fourth Annual Meeting, American Petroleum Institute.

There are many advantages in the A. S. T. M. procedure for the development of standards. Producers and consumers, in meeting to discuss specifications and tests, come to know each other's problems. The producers learn what is required of their product in service and the consumers become familiar with various problems of manufacture that influence specification requirements. Both are educated with resulting advantages in the development of standards. Specifications thus arrived at are more readily introduced into an industry and meet more quickly with general approval and use.

Study of Petroleum

The study of petroleum and its products was begun in 1904 with the organization of a committee to study tests for lubricants. Many years were devoted to investigations and discussions. By 1918 such standard tests for lubricants as those for specific gravity, free acid, carbon residue and viscosity had been adopted as standard.

In the meantime the petroleum industry had grown enormously; the need for authoritative test methods was imperative; and in 1920 the society entirely reorganized its work in this field, enlarging the committee to become Committee D-2 on petroleum products and lubricants, and making it more representative of both producers and users. In addition to the tests for lubricants, there are now standard tests for melting point of paraffin wax and for flash point with open and closed testers.

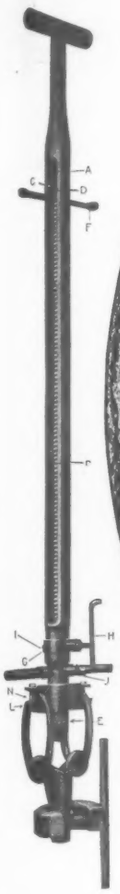
Methods of test now published as tentative include the following: For distillation of gasoline, melting point of petroleum, analysis of grease, viscosity, color, sulphur, precipitation number, steam emulsion, flash and fire point, saponification number, water and sediment in petroleum products, cloud and pour points, and a series of tests for gas oils. Many additional tests are being developed. This truly remarkable progress has been possible only through the coordinated efforts of the producers and consumers who have placed at the disposal of the committee facilities for testing and research no singie research laboratory could possibly command.

Cooperation With Industry

Since 1921 the committee has had officially the effective cooperation of the American Petroleum Institute, represented by Dr. Van H. Manning, Director of the Division of Research, secretary of the committee. The committee numbers 76 members, of whom 38 are producers. Among these producers is practically the entire membership of the advisory committee of the research department of the American Petroleum Institute. The committee has organized 22 sub-committees, each dealing with some test or product.

Samples of a variety of petroleum products are yearly distributed among the

(Continued on Page 101)



Largest Plant in the World Making Drilling and Fishing Tools

Drilling and fishing tools are usually wanted in a hurry. Therefore, it means a lot to know that the concern you place your order with maintains the largest plant in the world manufacturing these products.

Our 100 branches throughout the country will take care of your needs, or you can order direct.

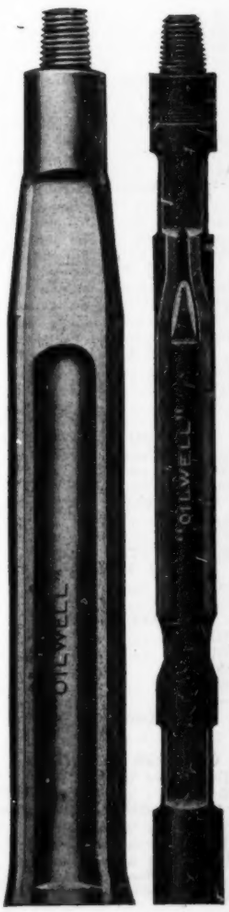
Oil Well Supply Co.

PITTSBURGH, U. S. A.

NEW YORK SAN FRANCISCO
LOS ANGELES TAMPICO LONDON

OILWELL SUPPLY CO

World's Largest Manufacturers of Oil Field Equipment



REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

CHICAGO DIST. (Based on Group 3)—	Dec. 11		Dec. 4		Nov. 27	
50-52 450 end point (Naphtha)	.06	.06¼	.05½	.05¾	.05½	.05¾
56-58 450 end point	.06	.06⅛	.06	.06¼	.05½	.05¾
58-60 437 end point (New Navy)	.06½	.06⅞	.06½	.06⅞	.06½	.06¾
60-62 400 end point	.07¾	.08	.07¾	.08	.07½	.07¾
64-66 375 end point	.08¾	.09	.08½	.08¾	.08½	.08¾
68-70 360 end point	.09¾	.10	.09¾	.10	.09½	.10
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.06	.06½	.05¾	.06	.05½	.05¾
56-58 450 end point	.06½	.06¾	.06¼	.06½	.06	.06¼
58-60 437 end point (New Navy)	.06¾	.07	.06½	.06¾	.06⅝	.06¾
60-62 400 end point	.08	.08¼	.07½	.07¾	.07½	.07¾
64-66 375 end point	.08¾	.09¼	.08½	.08¾	.08¼	.08½
68-70 350-365 end point	.09¾	.10	.09½	.09¾	.09¾	.10
KANSAS—						
58-60 437 end point (New Navy)	.07	.07¼	.06¾	.07	.06¾	.07
NORTH TEXAS—						
48-52 450 end point (Naphtha)	.06	.06¼	.05½	.05¾	.05	.05¼
50-52 440 end point (Naphtha)	.06	.06½	.05¾	.06¼	.05¼	.05½
56-58 450 end point	.06½	.06¾	.06¼	.06½	.06	.06¼
58-60 437 end point (New Navy)	.06¾	.07	.06½	.06¾	.06¼	.06½
60-62 400 end point	.07¾	.08¼	.07¼	.07½	.07¼	.07½
64-66 390 end point	.08¾	.09	.08	.08¼	.08	.08¼
64-66 375 end point	.09	.09¼	.08¼	.08½	.08¼	.08½
NORTH LOUISIANA—						
56-58 450 end point	.06	.06½	.06	.06½	.06	.06½
58-60 437 end point (New Navy)	.06¾	.07	.06¾	.07 -	.06¾	.07
60-62 400 end point	.07¾	.08	.07½	.07¾	.07¾	
64-66 400 end point	.08¼	.08½	.07¾	.08	.07¾	.08
64-66 390 end point	.08¾	.09	.08½	.08¾	.08½	.08¾
ARKANSAS—						
58-60 450 end point	.07	.07¼	.07	.07¼	.06½	.06¾
58-60 437 end point (New Navy)	.07¼	.07½	.07¼	.07½	.06¾	.07
64-66 375 end point	.08½	.09	.08½	.09	.08½	.09
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (New Navy)	.09½		.09½		.09½	
PENNSYLVANIA—						
52 Naphtha	.08¾		.08¾		.09½	
54 Naphtha	.09		.09		.09¾	
56 Gasoline	.09¾		.09¾		.10	
58 Gasoline	.09½		.10		.10¼	
60 Gasoline	.10		.10½		.10¾	
62 Gasoline	.11		.11½		.11	
64 Gasoline	.13		.13¼		.13	
66 Gasoline	.15¼		.15¾		.16	
68-70 Gasoline	.16		.16		.17	

*Colorado points.

NATURAL GASOLINE

CHICAGO DIST. (Based on Group 3)—	Dec. 11		Dec. 4		Nov. 27	
Grade A, 72-78 under 375 e.p., rec. 90%	.05½	.05¾	.05½	.05¾	.06⅛	.06⅜
Grade B, 76-82, 375 end point, rec. 85%	.05¼	.05½	.05¼	.05½	.05⅛	.06¼
Grade C, 80-88, 350 end point, rec. 78%	.05	.05¼	.05	.05¼	.05½	.05¾
OKLAHOMA (Group 3)—						
Grade A, 72-78, under 375 e.p., rec. 90%	.05¼	.05½	.05¼	.05¾	.05¾	.06
Grade B, 76-82, 375 end point, rec. 85%	.05¼	.05½	.05¼	.05½	.05½	.05¾
Grade C, 80-88, 350 end point, rec. 78%	.04¾	.05	.04¾	.05	.05	.05¼
Grade D, 88-92, 350 end point	.04¾	.05	.04¾	.05	.05	.05¼
NORTH TEXAS—						
80-84 compression	.04¾	.05	.04¾	.05	.05	.05½
84-90 compression	.04¾	.05	.04¾	.05	.05	.05¼
72-76 absorption	.05¼	.05½	.05¼	.05½	.05½	.05¾
76-82 absorption	.05	.05¼	.05	.05¼	.05½	.05¾
NORTH LOUISIANA—						
Grade B	.05	.05¼	.05¼	.05½	.06	.06¼
Grade C	.04¾	.05	.05	.05¼	.05¾	.06

MOTOR NATURAL GASOLINE (BLEND)

CHICAGO DIST. (Based on Group 3)—	Dec. 11		Dec. 4		Nov. 27	
58-62 437 end point	.05⅞	.06⅛	.05⅞	.06⅛	.06	.06⅛
60-62 450 end point	.05⅞	.06⅛	.05¾	.06	.06	.06⅛
64-66 450 end point	.05⅞	.06⅜	.05⅞	.06⅛	.06⅛	.06¼
OKLAHOMA (Group 3)—						
60-62 450 end point	.06	.06¼	.05¾	.06	.05¾	.06
64-66 437 end point	.06¼	.06½	.05¾	.06¼	.05¾	.06¼
68-70 430-435 end point	.06¼	.06½	.05¾	.06¼	.05¾	.06¼
NORTH TEXAS—						
58-62 440 end point	.06	.06¼	.06	.06⅛	.06	.06⅛
58-60 450 end point	.06	.06¼	.06	.06⅛	.06	.06⅛
PENNSYLVANIA—						
*60-62	.09½		.09½		.10	
*64-66	.09½		.09½		.10	
*66-68	.09½		.09½		.10	
*68-70	.09½		.09½		.10	

*At Sistersville, W. Va.

BURNING OIL

CHICAGO DIST. (Based on Group 3)—	Dec. 11		Dec. 4		Nov. 27	
41-43 water white Kerosene	.04⅝	.04⅝	.04⅝	.04⅝	.04⅜	.04½
42-44 water white Kerosene	.04½	.04⅞	.04½	.04¾	.04½	.04¾
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04½	.04¾	.04½	.04¾	.04½	.04¾
42-43 water white Kerosene	.04⅝	.04¾	.04⅝	.04¾	.04½	.04¾
41-43 prime white Kerosene	.04¼	.04⅜				
KANSAS—						
41-43 water white Kerosene	.04¾	.05	.04¾	.05	.04¾	.05
NORTH TEXAS—						
41-43 water white Kerosene	.04½	.04¾	.04¼	.04¾	.04½	.04¾
43-43 prime white Kerosene	.04¼	.04½	.04¼	.04½	.04¼	.04½
40-42 prime white Distillate	.04	.04¼	.04	.04¼	.04	.04¼
42-44 water white Kerosene	.04⅛	.05	.04¾	.05	.04¾	.05
NORTH LOUISIANA—						
41-43 prime white Kerosene	.04¾	.05	.04¾	.05	.04¾	
42-43 water white Kerosene	.05	.05¼	.05	.05¼	.05	
ARKANSAS—						
41-43 water white Kerosene	.04¾	.05	.04¾	.05	.04½	.04¾
42-44 water white Kerosene	.05	.05¼	.05	.05¼	.04¾	.05
ROCKY MOUNTAIN STATES—						
*40-42 prime white Kerosene	.07½		.07½		.07½	
PENNSYLVANIA—						
43 Kerosene prime white	.06¾		.06¾		.06¾	
45 Kerosene water white	.07		.07		.07	
46 Kerosene water white	.07¾		.07¾		.07¾	
47 Kerosene water white	.08		.08		.08	
36 Miners' Neutral	.07		.07		.07	

*Colorado points.

FUEL OILS

CHICAGO DIST. (Based on Group 3)—	Dec. 11		Dec. 4		Nov. 27	
24-26 Fuel Oil (sellers' cars, Group 3)	.72½	.77½	.70	.75	.67½	.72½
22-24 (El Dorado)	.62½	.67½	.62½	.67½	.60	.67½
18-20 (Smackover)	.55	.60	.55	.60	.55	.60
32-36 Gas Oil	.02¼	.02½	.02¼	.02⅜	.02¼	.02⅜
38-40 Straw distillate	.03	.03¼	.03⅛	.03⅜	.03¼	.03½
KANSAS—						
24-26 Fuel Oil	.90	.95	.85	.90	.85	.90
32-36 Gas Oil	.02½	.02¾	.02½	.02¾	.02½	.02¾
38-40 Distillate	.03½	.03¾	.03½	.03¾	.03½	.03¾
OKLAHOMA (Group 3)—						
24-26 Fuel Oil (buyers' cars)	.70	.75	.65	.70	.65	.70
24-26 Fuel Oil (sellers' cars)	.75	.80	.70	.75	.70	.75
28-30 Fuel Oil (sellers' cars)	.85	.90	.80	.85	.80	.85
32-36 Gas Oil	.02⅜	.02⅝	.02¼	.02½	.02¼	.02½
38-40 Straw Distillate	.03	.03¼	.03	.03¼	.03	.03¼
NORTH TEXAS—						
24-26 Fuel Oil	.70	.75	.60	.70	.60	.65
26-30 Fuel Oil	.75	.80	.70	.75	.65	.70
32-36 Gas Oil	.02½	.02⅝	.02¼	.02¾	.02¼	.02¾
36-38 Gas Oil	.02⅝	.02¾	.02½	.02⅝	.02½	.02⅝
38-40 Straw Distillate	.03	.03¼	.02⅞	.03⅛	.02⅞	.03⅛
NORTH LOUISIANA—						
20-22 Fuel Oil	.70	.75	.70	.75	.65	.70
32-36 Gas Oil	.02½	.02¾	.02½	.02¾	.02½	.02¾
38-40 light straw distillate	.03		.03		.03	
ARKANSAS—						
38-40 Distillate	.03		.03		.03	
32-36 Gas Oil	.02¾		.02¾		.02¾	
22-26 Refinery Fuel Oil	.65	.70	.65	.70	.60	.70
GULF COAST (South Texas)—						
Gas oil	.02¾	.03¼	.02¾	.03¼	.02¾	.03¼
Fuel oil	1.10	1.15	1.10	1.15	1.10	1.15
PENNSYLVANIA—						
30-34 Fuel Oil	.04¾		.04¾		.05¼	
36-40 Fuel Oil	.05		.05		.05½	
Neutral	.08		.08		.08	

NEUTRAL OILS

OKLAHOMA (Group 3)—	Dec. 11		Dec. 4		Nov. 27	
Pale Neutrals:						
70-80 vis., 2½ color, 20-25 cold test	.04	.04¼	.04	.04¼	.04	.04¼
100 vis., 2 color, 20-25 cold test	.05	.05½	.05	.05½	.05	.05½
100 vis., 3 color, 20-25 cold test	.04¾	.05	.04¾	.05	.04¾	.05
150 vis., 3 color, 20-25 cold test	.09½	.10	.09½	.10	.09½	.10
150 vis., 4 color, 20-25 cold test	.09	.09½	.09	.09½	.09	.09½
180 vis., 4 color, 23-28 cold test	.11¼	.11¾	.11¼	.11¾	.11¼	.11¾
180 vis., 3 color, 23-28 cold test	.12	.12½	.12	.12½	.12	.12½
200 vis., 3 color, 23-28 cold test	.13	.13½	.13	.13½	.13	.13½
200 vis., 4 color, 23-28 cold test	.12¾	.12¾	.12¼	.12¾	.12¼	.12¾
200 vis., 3 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
220 vis., 4 color, 25-30 cold test	.13¼	.13¾	.13¼	.13¾	.13¼	.13¾
240 vis., 3 color, 25-30 cold test	.15	.15½	.15	.15½	.15	.15½
240 vis., 4 color, 25-30 cold test	.14¼	.14¾	.14¼	.14¾	.14¼	.14¾
280 vis., 3 color, 25-30 cold test	.17½	.18	.17½	.18	.17½	.18
280 vis., 4 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
300 vis., 3 color, 25-30 cold test	.18	.18½	.18	.18½	.18	.18½
Red Neutrals:						
180 vis., 5 color, 23-28 cold test	.10½	.11	.10½	.11	.10½	.11
180 vis., 6 color, 23-28 cold test	.09¾	.10¼	.09¾	.10¼	.09¾	.10¼
200 vis., 5 color, 23-28 cold test	.11½	.12	.11½	.12	.11½	.12
200 vis., 6 color, 23-28 cold test	.10¾	.11¼	.10¾	.11¼	.10¾	.11¼
220 vis., 5 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
220 vis., 6 color, 25-30 cold test	.11¾	.12½	.11¾	.12½	.11¾	.12½
240 vis., 5 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 6 color, 25-30 cold test	.12¾	.13¼	.12¾	.13¼	.12¾	.13¼
280 vis., 5 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 6 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
300 vis., 5 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
150-160 vis., 1 color, 40-50 cold test	.04½	.05	.04½	.05	.04½	.05
190-200 dark green, 40-50 cold test	.03½	.04	.03½	.04	.03½	.04
600 steam refined	.16		.16		.16	
590-600 Bright Stock	.23	.26	.23	.26	.23	.26
600-610 Bright Stock	.28	.31	.28	.31	.28	.31
Waxes:						
124-126 White Crude Scale Wax	.02¾	.03	.02¾	.03	.02¾	.03

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

PENNSYLVANIA—	Dec. 11	Dec. 4	Nov. 27
150, 3 colon	.21¼	.21¼	.21
180, 3 color	.24	.24	.23½
200, 3 color	.26	.26	.25
220, 3 color	.29	.29	.28
600, steam refined	.11½	.11¾	.11½
635, steam refined	.14	.14	.14
650, steam refined	.15	.15	.15
600, Pennsylvania flash	.17	.17	.17
630, Pennsylvania flash	.23	.23	.21
*550, E filtered	.15	.15	.14
*600, E filtered	.17	.17	.16¼
600, E filtered	.15¼	.15¼	.15
600, D filtered	.21	.21	.21
550, E filtered	.14¼	.14¼	.13½
550, D filtered	.16	.16	.16
Pennsylvania Bright Stock	.31½	.31½	.31½
†122-124 White Crude Scale Wax	.03⅜	.03⅜	.03¼
†124-126 White Crude Scale Wax	.03½	.03½	.03⅜
300 Mineral Seal	.07½	.07⅝	.07¾

*At Warren, Penn. †At New York City.

GULF COAST (South Texas)—	Dec. 11		Dec. 4		Nov. 27	
Lubricating Stocks:						
Zero Black	.06	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.09	.10	.09	.10	.09	.10
No. 2½ color, 150 vis., pale oil	.10½	.11½	.10	.11	.10	.11
No. 3 color, 200 vis., pale oil	.11	.12½	.11	.12½	.11	.12½
No. 3½ color, 300 vis., pale oil	.14	.15	.14	.15	.14	.15
No. 3½ color, 500 vis., pale oil	.16	.17	.16	.17	.16	.17
No. 3½ color, 750 vis., pale oil	.21	.23	.21	.23	.21	.23
No. 1½ color, 150 vis., pale, filtered	.21	.22	.21	.22	.21	.22½
No. 2 color, 200 vis., pale, filtered	.23	.25	.23	.25	.24	.25
No. 3½ color, 500 vis., pale, filtered	.32	.33	.32	.33	.32	.33
No. 3½ color, 750 vis., pale, filtered	.38	.40	.38	.40	.38	.40
No. 5 color, 200 vis., red oil	.10	.11	.10	.11	.10	.11
No. 5 color, 500 vis., red oil	.13½	.14½	.13½	.14½	.13½	.14½
No. 5 color, 750 vis., red oil	.20	.21	.20	.21	.20	.21

NEW YORK DOMESTIC MARKET

Motor Gasoline:	Dec. 11	Dec. 4	Nov. 27
Greater New York, in steel barrels	.15½	.15½	.15½
New York State (outside Greater New York and New England, tank wagon	.15½	.15½	.15½
New Jersey, tank wagon	.15½	.15½	.15½
V. M. P. Naphtha, in steel barrels	.14½	.14½	.14½
Kerosene:			
Greater New York, tank wagon	.15	.15	.15
New York State (outside Greater New York and New England, tank wagon	.15	.15	.15
Gasoline in bulk, delivered at N. Y.	.09½	.09½	.09½
New Jersey, tank wagon	.14	.14	.14
Lubricating Oil (Industrial) at refinery:			
Bayonne, N. J.:			
Cylinder, extra light filtered, in barrels	.36½	.36½	.36½
Cylinder, light filtered, in barrels	.31½	.31½	.31½
Cylinder, Bright Stock	.44	.44	.44
Cyinler, steam refined (600)	.21½	.21½	.21½
Black, in bulk	.09½	.09½	.09½
Bloomless, white, 30-31 gravity, 170 vis	.43	.43	.43
Bloomless, 885 specific gravity	.10½	.10½	.10½
Red Paraffin:			
170 viscosity	.18½	.18½	.18½
212 viscosity	.20	.20	.20
265 viscosity	.22	.22	.22
295 viscosity	.25	.25	.25
Paraffin, 903 specific gravity	.22½	.22½	.22½
*Fuel Oil:			
Bunker Oil, 14 plus, delivered in barges, bbl.	1.35	1.35	1.35
Diesel Oil, at refinery, gallon	.03½	.03½	.03½
Furnace oil, tank wagon, gallon	.10	.10	.10
Gas Oil, delivered in New York	.04	.04	.04
Wax, fully refined:			
120-122 a.m.p.	.03⅜	.03⅜	.03⅜
125-127 a.m.p.	.03¾	.03¾	.03¾
130-132 a.m.p.	.04¼	.04¼	.04¼
135-137 a.m.p.	.05¼	.05¼	.05¼

*Lighterage, 6.5c a barrel extra.

NEW YORK EXPORT PRICES

	Dec. 11	Dec. 4	Nov. 27
Motor Gasoline, in cases, gallon	.24.4	.24.4	.24.15
Motor Gasoline, U. S. Navy, spec., gallon	.10.5	.10.5	.10.5
Naphtha, 60° F., 59-61 spec. grav.	.12.0	.12.0	.12.0
Naphtha, 60° F., 63-66 spec. grav.	.14.0	.14.0	.14.0
Naphtha, 60° F., 66-68 spec. grav.	.15.5	.15.5	.15.5
Kerosene:			
Standard white, in bulk, gallon	.07	.07	.07
Standard white, in barrels, gallon	.14	.14	.14
Standard white, in cases, gallon	.17.15	.17.15	.16.9
Water white, in bulk, gallon	.08	.08	.08
Water white, in barrels, gallon	.15	.15	.15
Water white, in cases, gallon	.18.5	.18.15	.17.9

CRUDE OIL PRICES

November 13.—Joseph Seep Purchasing Agency reduced all grades of Pennsylvania crudes 15 cents. Cabell crude was reduced 15 cents and Somerset light and medium crudes 10 cents.

November 14.—Joseph Seep Purchasing Agency reduced Corning crude 20 cents.

November 15.—Standard Oil Co. of Louisiana reduced Caddo, Homer, Haynesville, El Dorado, Bull Bayou and De Soto crudes from 10 to 25 cents with the exception of Caddo below 32° and Homer below 31°, which were unchanged.

November 16.—The Texas Co. announced that it would purchase all oil in storage and would absorb all storage charges provided the sale was made within 10 days.

November 19.—Magnolia Petroleum Co. advanced Corsicana light (Powell) crude 25 cents. The same company on October 30 reduced this crude 25 cents. Change at that time was not met by all major purchasing companies and resulted in the return to the posted price of $1.

November 20.—Lance Creek and Osage crudes advanced 10 cents.

November 16.—Atlantic Oil & Producing Co. posted new prices for Stephens County, Arkansas crude. The company has two grades replacing four schedules.

Oklahoma and Kansas

Below 33°	$ .75
33° to 39.9°	1.00
40° and above	1.25
Magnolia Petroleum Co.:	
Below 28°	.40
28° to 30.9°	.60
31° to 32.9°	.75

Arkansas and North Louisiana

Caddo, 38° and above	$1.10
35° to 37.9°	1.00
32° to 34.9°	.90
Below 32°	.75
Homer, 35° and above	1.10
33° to 34.9°	1.00
31° to 32.9°	.90
Below 31°	.75
Haynesville, 33° and above	1.00
Below 33°	.90
El Dorado, 33° and above	1.10
Below 33°	1.00
Bull Bayou, 38° and above	1.05
35° to 37.9°	.90
32° to 34.9°	.75
De Soto	1.10
Crichton	.90
Bellevue	.75
Smackover, 26° and above	.75
25° to 25.9°	.60
24° to 24.9°	.50
Below 24°	.40
*Stephens, Ark., 28° and above	.80
26° to 27.9°	.75

*Posted by Atlantic Oil Prod. Co.

Wyoming and Montana

Rock Creek (Wyo.)	$ .60
Salt Creek	.60
Big Muddy	.45
Mule Creek	.45
Grass Creek	.95
Elk Basin	.95
Lance Creek	.90
Osage	.90
Cat Creek (Mont.)	.90
Sunburst (Mont.)	.70
Greybull and Torchlight	.95
Hamilton Dome	.52½

Lander and Lost Soldier based on contracts covering entire production of fields.

North Texas and Central Texas

Corsicana light	$1.00
Corsicana heavy	.40
Mexia	1.00
Currie	1.00
Powell	1.00
Thrall	1.00

Moran, Burkburnett, Electra, Archer County, Stephens County, Strawn, Ranger, Desdemona, Pioneer and Young County.

Below 33°	$ .75
33° to 39.9°	1.00
40° and above	1.25
Humble Oil & Refining Co.:	
Below 30°	$ .80
32° to 32.9°	.90
33° to 35.9°	1.00
36° to 38.8°	1.15
39° and above	1.30
Magnolia Petroleum Co.:	
Below 28°	.40
28° to 30.9°	.60
31° to 32.9°	.75
33° to 39.9°	1.00
40° and above	1.25

Gulf Coast

Gulf Pipe Line Co., Goose Creek, Hull, Sour Lake, Batson, Saratoga, Spindletop, Orange, Vinton, Edgerly, Jennings	$1.00
Grade "B," Pierce Junction, Blue Ridge	.90
The Sun Pipe Line Co., Grade "A" Humble, Hull, Goose Creek, Orange, Spindletop, Saratoga, Batson, Dayton, Sour Lake	1.00
Humble Pipe Line Co., Goose Creek, Hull, West Columbia, Orange	1.00
Grade "B," Pierce Junction	.90
Texas Pipe Line Co., Humble, West Columbia, Orange, Sour Lake, Saratoga, Batson, Vinton, Jennings, Markham	1.00
Sinclair Pipe Line Co., West Columbia, Damon Mound	1.00

California

14° to 19.9°	$ .60
20° to 20.9°	.61
21° to 21.9°	.62
22° to 22.9°	.63
23° to 23.9°	.64
24° to 24.9°	.65
25° to 25.9°	.66
26° to 26.9°	.67
27° to 27.9°	.68
28° to 28.9°	.69
29° to 29.9°	.70
30° to 30.9°	.71
31° to 31.9.	.72
32° to 32.9°	.73
33° to 33.9°	.74
34° to 34.9°	.75
35° gravity and above	.76

Eastern States

Penna Grade Oil in New York Transit Lines	$2.60
Bradford District Oil in National Transit Lines	2.60
Penna Grade Oil in National Transit Lines	2.35
Penna Grade Oil in Southwest Pa. Pipe Lines	2.35
Penna Grade Oil in Eureka Pipe Line Lines	2.35
Penna Grade Oil in Buckeye Pipe Line Lines	2.35
Corning Grade Oil in Buckeye Pipe Line Lines	1.25
Cabell Grade Oil in Eureka Pipe Line Lines	1.20
*Somerset Medium Oil in Cumberland Pipe Line Lines	1.15
*Somerset Light Oil in Cumberland Pipe Line Lines	1.30
Ragland Grade Oil in Cumberland Pipe Line Lines	.75
Lima	1.43
Wooster	1.25
Illinois	1.22
Indiana	1.23
Princeton	1.22
Plymouth	.60
Waterloo	.70
†Petrolia, Canada	2.03
†Oil Springs, Canada	2.10

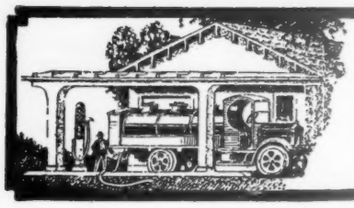
*Somerset oil commands 6 cents over the above posted price.

†Plus Government bounty of 52½c.

Mexican Crude

*Tuxpam (f. o. b. Mexican ports)	$ .80
†Panuco (f. o. b. Mexican ports)	.50
Tuxpam (New York)	1.34
Panuco (New York)	.92

*Plus 29.38c tax. †Plus 16.59c tax. Prices based on contracts.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, Dec. 11

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline			Kero.
	Tank wagon	Incldg tax	Service of station	Tank wagon
Chicago district	12.0	..	14.0	10.0

Tank wagon prices on April 10, 1922, g. up 1½c; May 8, g. up 1c; June 27, both up 1c; July 19, g. down 2c; k. down 1c; Oct. 10, g. down 2c; Oct. 31, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c.

Decatur, Ill.	12.2	..	14.2	10.5
East St. Louis	11.1	..	13.35	9.6
Joliet	12.4	..	14.4	10.7
Peoria	12.2	..	14.2	10.5
Quincy	12.2	..	14.2	10.3
Davenport, Ia.	12.6	..	14.5	10.9
Des Moines	12.5	..	14.5	10.9
Keokuk	12.5	..	14.5	10.9
Sioux City	12.0	..	14.0	10.5
Duluth, Minn.	13.2	..	15.2	11.6
Minneapolis	12.9	..	14.9	11.6
La Crosse, Wis.	13.2	..	15.2	11.4
Milwaukee	12.0	..	14.0	10.2
Madison	12.3	..	14.3	10.5
Detroit, Mich.	10.8	..	12.8	11.2
Grand Rapids	12 7	..	14.7	11.1
Saginaw	12.9	..	14.9	11.3
Evansville, Ind.	14.0	2.0	16.0	10.5
Fort Wayne	14.4	2.0	16.4	10.9
Indianapolis	14.2	2.0	16.2	10.7
South Bend	12.4	2.0	14.4	10.9
Fargo, N. D.	14.6	1.0	16.6	13.6
Huron, S. D.	16.0	2.0	18.0	12.1
Sioux Falls	15.5	2.0	17.5	11.6
*Kansas City	11.9	1.0	13.9	9.3
Springfield	11.8	..	13.8	10.2
*St. Louis	11.6	.5	13.9	10.0
*St. Joseph	12 3	.5	14.3	10.2
Wichita, Kans.	11.8	..	13.8	9.8

*City tax.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Incldg tax	Service of station	Tank wagon
*Pittsburgh, Pa.	14.0	..	19.0	14.0
*Philadelphia	14.0	..	19.0	14.0
*Scranton	14.0	..	19.0	14.0
*Allentown	14.0	..	19.0	14.0
*Altoona	14.0	..	19.0	14.0
Dover, Del.	15.0	1.0	18.0	14.0
Wilmington	15.0	1.0	18.0	14.0
Providence, R. I	15.5	..	18.0	15.0
Springfield, Mass	14.5	..	17.0	15.0
Worcester	14.5	..	17.0	15.0
Boston	14.5	..	17.0	15.0
Hartford, Conn.	16.5	1.0	19.0	15.0
New Haven	16.5	1.0	19.0	15.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Incldg tax	Service of station	Tank wagon
Atlanta, Ga.	16.0	3.0	18.0	14.0
Augusta	18.0	3.0	20.0	15.0
Macon	18.0	3.0	20.0	15.5
Savannah	16.0	3.0	18.0	14.0
Birmingham, Ala.	16.0	2.0	18.0	15.5
Mobile	16.0	2.0	17.0	13.5
Montgomery	16.0	2.0	18.0	16.0
Clarksdale, Miss	14.0	1.0	16.0	14.0
Jackson	14.0	1.0	16.0	12.0
Natchez	13.5	1.0	15.5	13.5
Vicksburg	13.5	1.0	15.5	13.5
Jacksonville, Fla	16.0	3.0	18.0	14.0
Miami	18.0	3.0	20.0	15.5
Pensacola	16.0	3.0	18.0	14.5
Tampa	16.0	3.0	18.0	14.0
Covington, Ky.	16.0	1.0	18.0	13.0
Lexington	15.0	1.0	17.0	14.0
Louisville	14.0	1.0	16.0	13.0

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Incldg tax	Service of station	Tank wagon
Denver, Colo.	13.0	2.0	15.0	12.5
Glenwood Spgs.	19.0	2.0	....	16.5
Pueblo	15.0	2.0	17.0	12.5
Basin, Wyo.	16.0	1.0	....	13.0
Casper	14.0	1.0	16.0	11.0
Cheyenne	15.5	1.0	17.5	13.0
Cody	17 0	1.0	....	14.0
Lander	16.0	1.0	....	13.0
Billings, Mont.	18.5	2.0	20.5	14.5
Butte	20.0	2.0	22.0	15.0
Great Falls	20.0	2.0	22.0	16.0
Helena	20.0	2.0	22.0	16.0
Miles City	19.5	2.0	21.5	15.5
Boise, Idaho	20.0	2.0	22.0	18.0
Salt Lake, Utah	18.0	2.5	20.0	15.5
Ogden	18.0	2.5	20.0	15.5
Albuquerque, N. M.	18.0	1.0	20.0	15.5

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Incldg tax	Service of station	Tank wagon
Newark, N. J.	15.5	..	....	14.0
Atlantic City	15.5	..	....	14.0
Annapolis, Md.	16.0	1.0	19.0	14.0
Baltimore	16.0	1.0	19.0	13.0
Cumberland	16.0	1.0	19.0	15.0
Washington, D. C.	15.0	..	18.0	13.5
Norfolk, Va.	18.0	3.0	20.0	13.0
Petersburg	18.0	3.0	20.0	14.5
Danville	18.0	3.0	20 0	15.5
Richmond	18.0	3.0	20.0	13.5
Roanoke	18.0	3.0	20.0	15.0
Keyser, W. Va.	17.0	2.0	....	15.0
Charleston	17.0	2.0	....	13.5
Parkersburg	17.0	2.0	....	12.0
Wheeling	17.0	2.0	....	13.5
Charlotte, N. C.	18.0	3.0	....	14.5
Hickory	18.0	3.0	....	15.0
Mt. Airy	18.0	3.0	....	14.5
Salisbury	18.0	3.0	....	15.0
Charleston, S. C.	18.0	3.0	....	12 5
Columbia, S. C.	18.0	3.0	20.0	14.5

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Incldg tax	Service of station	Tank wagon
Dallas, Tex.	12.0	1.0	15.0	8.0
Fort Worth	12.0	1.0	15.0	10.0
Houston	14.0	1.0	18.0	11.0
San Antonio	12.0	1.0	15.0	9.0
El Paso	14.0	1.0	17.0	12.0
Muskogee, Okla.	9.0	1.0	12.0	10.0
Oklahoma City.	12.0	1.0	15.0	10.0
Tulsa	9.0	1.0	12.0	10.0
Ft. Smith, Ark.	13.0	1.0	16.0	12.0
Little Rock	15.0	3.0	18.0	13.0
Texarkana	15.0	3.0	18.0	12.0

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Incldg tax	Service of station	Tank wagon
New Orleans, La	12.5	1.0	14.5	12.0
Alexandria	13.5	1.0	15.5	13.0
Baton Rouge	12.0	1.0	14.0	11.5
Lake Charles	13.5	1.0	15.5	13.0
Shreveport	13.5	1.0	15.5	13.0
Memphis, Tenn.	15.5	2.0	17.0	14.0
Chattanooga	15.5	2.0	17.5	14.5
Knoxville	16.5	2.0	18.5	15.0
Nashville	15.5	2.0	17.5	14.0
Bristol	17.0	2.0	19.0	15.5
Little Rock, Ark	16.5	3.0	18.5	13.0
West Helena	16.5	3.0	18.5	13.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Incldg tax	Service of station	Tank wagon
Albany, N. Y.	15.5	..	18.5	14.0
*New York	15.5	..	18.0	15.0
Buffalo	14.0	..	17.0	15.0
Rochester	15.0	..	17.0	13.0
Syracuse	15.0	..	17.0	15.0
Boston, Mass.	14.5	..	17.0	15.0
Providence, R.I.	15.5	..	19.0	15.0
Augusta, Me.	15.5	1.0	19.0	15.0
Manchester	15.5	1.0	19.0	15.0
Burlington, Vt.	15.5	1.0	19.0	15.0

*Price in steel barrels.

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Incldg tax	Service of station	Tank wagon
San Francisco	13.0	2.0	16.0	15.5
Los Angeles	12.0	2.0	15.0	15.5
Fresno	13.5	2.0	16.5	17.5
Reno, Nev.	16.5	2.0	19.5	19.0
Portland, Ore.	15.0	3.0	18.0	16.5
Seattle, Wash.	13.0	1.0	16.0	16.5
Tacoma	13.0	1.0	16.0	16.5
Spokane	17.0	1.0	20.0	20.5
Phoenix, Ariz.	19.0	3.0	22.0	21.5
Honolulu, H.	12.5	..	15.5	17.5
Juneau, Alaska	13.5	..	16.5	18.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Incldg tax	Service of station	Tank wagon
Omaha	12.25	..	14.25	10.5
Crawford	13.0	..	.....	11.25
McCook	13.75	..	15.75	12.0
Norfolk	12.75	..	14.75	11.00
North Platte	13.75	..	15.75	11.75
Scotts Bluff	13.25	..	15.25	11.25

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Incldg tax	Service of station	Tank wagon
All Ohio points.	16.0	..	18.0	13.0

TANK WAGON CHANGES

Effective December 4, Magnolia Petroleum Co. advanced gasoline tank wagon and service station prices 5 cents at Dallas, Fort Worth and San Antonio, Tex., and 2 cents at El Paso, Tex.

Effective December 8, the Continental Oil Co. reduced the gasoline and service station prices 1 cent at Glenwood Springs and Pueblo, Colo.

Effective December 10, the Atlantic Refining Co. reduced the gasoline tank wagon and service station prices 1 cent in Delaware and Pennsylvania and advanced the kerosene tank wagon prices 1 cent in New England States.

Coastal Refineries Have Good Business Booked for December

HOUSTON, Tex., Dec. 10.—Sufficient orders already have been booked by coastal refiners to insure creditable business for December. Some offices have orders on file in excess of the number on file at this date in November. Since November was perhaps the best month of the past two years for business in zero cold test oils, December presents a pleasing picture to the refiners of the section.

Indications are that prices will go no higher for December. In fact, the bulk of the business accepted has been at prevailing quotations.

The trend of quotations after January 1 will depend on the crude market. The opinion is common that the crude price will advance on coastal oil but the date for the change offers a question of varying answers. Some students of the price trend believe the advance will come shortly after the first of the year. The latest date fixed is March 1. There are all sorts of guesses between those dates.

Shipments at present are confined largely to the lighter viscosity oils. The 100, 200 and 300 viscosity products in pale, filtered and red are moving steadily to all sections of the country. Refiners have no figures for comparison, but they express the belief that zero cold test oils are enjoying wider use this winter than ever before.

The Southeastern States, Mississippi, Alabama, Georgia and Florida are drawing heavily on lubricants from coastal crude, with a big cotton crop, selling above 30 cents a pound, refiners are enjoying excellent business in this belt. Present business is excellent and in some cases jobbers are paying accounts of several months' standing. The general prosperous condition of the section is responsible for this.

The Middle West is taking its usual quota of zero cold test oils. Scores of shipments are moving across the boundary into Canada. Cargo shipments both to Europe and to Atlantic ports are taking no small part of the plant output of the Houston district.

After a spell of sluggish action, gas oil has advanced in price and most of the stock in the coastal belt either has been shipped or is sold and awaiting tankers for loading. The price is from 3 to 3½ cents.

Fuel oil, however, is around its former level of $1.10 to $1.15 per bbl. Absence of any cold weather thus far on the coast and the low price of B grade coastal oil have worked against any rise in the fuel oil market.

PRIZER SAYS GALICIA DISRUPTED BY PEACE

"Looking into the future, I do not believe that the present political divisions of Europe will be permanent, because they are geographically unnatural and geographically unsound. The welfare of humanity rests upon economic conditions, and, hence, political divisions become unstable when they seriously interfere with the natural economic trend," said Edward Prizer, president of the Vacuum Oil Co. in an address on "Things Abroad," delivered at the meeting of the American Petroleum Institute, St. Louis, December 12. The Vacuum Oil Co. operates throughout Europe and Mr. Prizer recently returned from a trip of inspection abroad. Continuing, he said in part:

"A close circle of customs barriers now strangles the trade which formerly flowed throughout a very wide territory. The economic burdens placed upon the common people of Europe, in consequence of the various principalities created by the Peace Commission, are beyond ability to carry, and have produced already financial breakdown.

"A clear illustration of this situation can be shown by the present state of the petroleum refining industry in the old Austrian-Hungarian Empire. When this Empire had within its area the old fields of Galicia, refining plants were constructed at various natural and strategic points in relation to economic distribution of products throughout the whole Empire. Czechoslovakia now finds itself with three times the refining capacity needed for its own inhabitants, and without crude supply. Plants which were constructed in Hungary and Jugoslavia before the separation are in the same situation. To operate these plants it is necessary to import crude, or partly finished products, from Poland, Rumania or Russia, and such importations are attended with so much difficulty and expense as to make these various refineries, representing a large outlay and designed for other conditions than now exist, practically nonproductive.

"It is a natural inclination for those countries, which now control the crude supply, to make their neighbors without it pay tribute to them. They are not concerned over the dead investment represented in refining capacity in those countries which through the changes of the war have lost their free flow of raw material."

P. & R. SALT LAKE OFFICE

Following a recent visit of President W. L. Kistler and Vice President H. E. Johnston, of the Producers & Refiners Corp., to Salt Lake City, the corporation has selected that point for a location for a new sales office. This will be the sixth sales office to be established by this company, the others being at Denver, Chicago, Tulsa, Casper, and Parco, Wyo.

M. C. Bradshaw, who has represented the corporation in the Salt Lake territory for some time past, has been placed in charge of the new office, which is located in the Deseret National Bank Building.

The corporation, through one of its associated companies, the Parco Development Co., is building a town at Parco. Up to date the main unit has been completed, consisting of church, school, moving picture theater, business block, central garage, bank, club, and numerous residences. A 60-room hotel is under construction.

NEW OIL COMPANIES

Fifty-four oil companies were organized in November, with total capital $43,085,000, compared with 46 in October capitalized at $79,669,840 and 41 in September capitalized at $34,515,000.

Questions & Answers on the Wiggins Floating Roof

How is the space between rim of float and shell of tank sealed?

This seal is a very ingenious device. A vertical plate, called the shoe, fits against the tank shell. It is supported by a hanger pivoted on the float rim. The space between shoe and float rim is closed by a plate and asbestos connection. This device reduces the space open to the air to almost nothing.

Is the shoe close enough to the shell to prevent free evaporation?

The shoe fits tightly against the tank shell in parallel contact. Practically the only space is at the vertical seams, where the rivet heads make a slight air space.

Is there no evaporation space whatever?

There is a maximum open space in a 55,000-barrel tank of only 15 square feet.

Would not this cause some evaporation?

Practically none. The open space in a 55 with ordinary roof is more than 10,000 square feet. This is more than ordinarily maintained by the seal.

Yes, but if the ordinary roof is gas-light wonld not that prevent evaporation?

No. Air is sucked in and expelled by breathing and filling and the expelled air takes much valuable gasoline vapor with it.

How much?

This question is too broad to be answered here, but, for example, a 55 handling 10,000 barrels of crude oil a day will waste $10,000 worth of gasoline in a year.

Admitting this loss in handling tanks, isn't it a fact that on standing storage there is very little evaporation?

Absolutely no. In one year the evaporation from motor fuel in a 55,000-barrel tank with a fixed roof will be from 750 to 3,500 barrels, depending on the type of roof. This will be reduced to approximately 250 or 300 barrels if a Wiggins Floating Roof is used.

What are the figures for light crude testing from 37° to 40° Be.?

The loss is from 400 to 1,500 barrels a year with fixed roof but only 100 barrels with a Wiggins Floating Roof.

Is there any difficulty in taking care of rain?

None whatever. The rain control and rain drainage systems are built to keep water off the roof.

How is the tauk braced against wind load?

A girder placed around the top of the tank shell. This provides ample resistance against the wind.

Request Slip

CHICAGO BRIDGE & IRON WORKS
2128 Transportation Building, Chicago

Please send me the Report on Fire Tests on Wiggins Floating Roof, and the bulletin to be ready soon.

Name .....

Title .....

Company .....

Address .....

349

Where there is Air there is Evaporation

Is There an Air Space Above the Oil In Your Tanks?

If there is, you are losing the best of the gasoline fraction through evaporation. It does no great good to make a canopy roof gas-tight, for this does not eliminate the air space—and where there is air there is evaporation.

You cannot prevent the light fractions of your oil from passing off in the form of vapor if you leave an air space above the oil. The air space in a canopy roof tank always contains gasoline vapor—and you are sure to lose it when the air passes out of the tank through breathing or filling and emptying.

Did you know that the evaporation loss in a 55,000-barrel tank containing gasoline of 58° Baume is over $14,000 a year for a class one canopy roof? (See our Bulletin.) The loss with a Wiggins Floating Roof is less than one-tenth as much.

Do you know that a gas-tight canopy roof does not protect against losses due to filling and emptying? On the other hand, the Wiggins Roof protects against *all* evaporation losses. A tank so equipped may be used for standing storage, or may be discharged and refilled, or may be used as a working tank—and the loss will still be practically nothing.

Fire Safe, Too

In addition to stopping evaporation losses as can be done in no other way, the Wiggins Floating Roof takes the fire hazard away from oil storage. This remarkable roof does not keep the oil vapor and confine it, maintaining a constant source of great danger, but gets rid of this dangerous explosive vapor by the simple means of getting rid of the air.

Locks the Barn Door Before

The best way to stop a fire is to blanket it and exclude the air. Instead of waiting until after the oil has caught on fire to do this the Wiggins Roof does it beforehand. The roof *blankets* the oil surface, stops evaporation and practically eliminates fire hazard, something no other type of roof can do.

The important thing to remember is that the Wiggins Floating Roof stops evaporation from *all sources*—it does not stop only that due to one source.

Let us send you a bulletin which tells the facts about evaporation. The adjoining coupon will bring it to you.

CHICAGO BRIDGE & IRON WORKS

CHICAGO 2128 Transportation Bldg. | NEW YORK 2147 Hudson Terminal | DALLAS 1641 Praetorian Bldg. | SAN FRANCISCO 1054 Rialto Bldg.

HORTON Products include the 5 RING 55, 7 RING 80 and other tanks, THE HORTONSPHERE and Refinery Equipment

Problems of Oil Burner Manufacturers

Need of Equipment to Utilize Low Gravity Oils Emphasized at Meeting of Oil Producers and Makers of Burners

By Ralph T. Baker

CHICAGO, Dec. 10.—Oil men and oil burner manufacturers doing business in the Central States were brought closer together and obtained an intimate understanding of each other's problems as a result of a meeting of the two groups in the Congress Hotel here last Thursday. A resolution was adopted authorizing the appointment of a committee of refiners and jobbers, burner manufacturers and dealers, architects, combustion engineers, tank makers, insurance men, a fire marshal, and representatives of other auxiliary business lines, interested to a greater or lesser degree in the improvement and sale of fuel oil burners for domestic uses. The committee was instructed to meet and prepare a resolution for the consideration of the American Association of Oil Burner Manufacturers, in session at St. Louis, December 10, and the American Petroleum Institute, which meets in St. Louis December 11-13.

Many troublesome questions which have been worrying some of the men interested in the growth of the oil burner business were aired to good effect during the meeting. Richard A. Wotowich, personal representative of Henry L. Doherty, was present and contributed to the perfection of the alliance between the oil men and the oil burner manufacturers. He read a paper written for the occasion by Mr. Doherty, which was the subject of a resolution commending it and Mr. Wotowich, and endorsing the recommendations made by its author.

Need Low Gravity Burners

The most significant thought during the evening was brought out forcibly by Edward P. Bailey, of the National Air Oil Burner Co., Philadelphia industrial burner manufacturer, who has attended similar meetings held recently in the East. He reviewed significantly the rapid growth of the burner industry in the face of active opposition. He showed the strides made in industrial burner installations, similar to those manufactured by his concern.

"You domestic burner men will have to get down to brass tacks before you will succeed," he asserted. "You will have to perfect a burner that will utilize fuel oil in the 20 gravity list. You are facing a serious proposition. The time will come when it will be impossible to get the higher gravity burning oils. Pyramiding the number of installations will tend to make kerosene and distillate and possibly gas oil too high in price for the ordinary user. The household burner must be made to use 20-gravity fuel."

Mr. Bailey continued with an assertion that his company had tried for years to perfect a domestic burner using low gravity fuel, with only partial success. He declared that of the hundreds of burners on the market for home use at the present time, he could recommend only two. He asserted that the domestic burning oil of the future would have to be cracked residuums, bottoms and low grade stuff from topping plants.

Cooperation Is Essential

John D. Reynolds, secretary of the American Oil Men's Association, called the meeting to order with about 60 men present. He outlined the purpose of the meeting, gave a summary of the work accomplished in the East, and other parts of the United States, referring to the previous addresses made by Mr. Doherty. He then introduced A. T. Locke, Chicago jobber, who acted as chairman of the meeting.

Mr. Wotowich told of the activity between oil men and burner manufacturers in Eastern States, which followed Mr. Doherty's recent address to oil men at Atlantic City. He told of interesting meetings at New York, Boston and Philadelphia, where definite action was taken for the betterment of both the oil industry and the oil burner manufacturing business.

"Oil men and burner manufacturers alike should feel a share of the responsibility in perfecting and manufacturing this new appliance," he said. "There are other business men who are interested in the burner, however, and they should be given a voice in making the installations. We should secure the cooperation of the architect, the electrician, fire marshal, insurance men, steam fitter, combustion and heating engineers, and others to make the thing a success.

"The home oil burner is a public utility proposition," Mr. Wotowich asserted. "The proposition of burning oil for fuel purposes is not new to oil men, but a different question arises in adapting it for use in the home. The oil men and the burner men and others interested should get together on a common ground and work out their problems. The time is not far off when a lot of legislation concerning home oil burners will be agitated and passed. The insurance men will be compelled to require a standard set of rules in regulating domestic burners. We must lead the public action.

"The public must be shown that the burner is fool proof and that the oil burned in it is not dangerous. The public cannot grasp the mechanical details as quickly as the burner men. It is up to the burner men to give the public a burner that is correct mechanically. The oil men will see to the fuel supply."

Paper by H. L. Doherty

He read Mr. Doherty's message as follows:

"The use of oil and artificial gas are bound to come into very extensive use in the heating of homes. This demand has not sprung up through any effort on the part of the oil companies, but has sprung up by the demand from the public.

"Thousands of burners are now in successful use and no one could stop the development of this business if they were to try. While on the other hand, by a reasonable effort on the part of the different people interested in this service, an enormous impetus could be given to it.

"It would seem at first as though business was so competitive that there would be no good grounds for cooperation. On the other hand, there can be no question but what the problems of everybody interested in pushing oil for house heating purposes are more or less common. We must collectively fight for the battle of oil with the public authorities. It is only human nature for the fire commissioners of every community to either absolutely forbid the use of oil or make restrictions which are prohibitive.

"One oil company or one burner company cannot force reasonable rules. The public must be educated and this cannot be done by a single oil company or a single burner company; it must be done collectively. Collective work will make business for all and that is the reason why everybody who is interested in promoting oil for house heating purposes should stand together and work cooperatively on these problems which mean for the greater utilization of oil for house heating purposes.

The Question of Costs

"There is to my certain knowledge a total lack of appreciation of what a householder can pay for heating his house with oil. The price of coal is only one item in the cost of heating houses with coal and you must keep in mind always not the cost of coal for heating a house but the cost of heating a house with coal Often, where coal is the most expensive the cost of taking care of the furnace and disposition of ash is more than the entire cost of the coal and in places where coal is relatively cheap the cost for taking care of the furnace and removing ash is often twice as much as the cost of coal.

"House heating with oil cannot be measured by mere cost. The artificial gas companies in this country saw electricity adopted for lighting purposes almost universally at a time when they could give the public five times as much light for the same money as the prevailing rates of the electric companies, but the public then wanted convenience and comfort and ever since then the public have been educated more and more to the desire for convenience and comfort and have developed a greater willingness to pay for convenience and comfort. It is almost impossible to heat a house satisfactorily with coal, but possible to heat a house with the greatest degree of satisfaction with oil.

"There are nearly 15,000,000 motor cars in use in this country and yet the same people who say that the public cannot afford to heat their houses with oil would have said 20 years ago that not to exceed 500,000 people in this country could have afforded to have had a motor car. Perhaps these people can or cannot afford a motor car but nevertheless, they do afford a motor car and the motor car in many ways is more of a luxury and much more expensive, relatively, than heating a house with oil.

"The oil companies are now alive to this problem and will give to the burner manufacturers their hearty cooperation. If anybody had asked the oil industry 20 years ago where they were going to get 180,000,000 barrels of gasoline to supply motor cars of this country in 1923, they would have all said that the problem was impossible, but we have met the problem and are not afraid to

(Continued on Page 100)

OIL BURNER MANUFACTURERS URGE PETROLEUM INDUSTRY TO COOPERATE

By E. P. Bailey

Representing the American Association of Oil Burner Manufacturers Before Group Session on Utilization of Petroleum, December 12, Fourth Annual Meeting American Petroleum Institute

For our present purpose, users of oil as fuel may be classified in three groups: First, those in which oil as fuel is practically indispensable, such as the making of illuminating gas and marine transportation; second, those in which oil as fuel is very advantageous, though not indispensable, such as glass making, heat treating furnaces, open hearth furnaces, etc., and third, those in which oil can be used advantageously, but where other fuel can be made to serve equally well, as in steam boiler furnaces, brick kilns, household heating furnaces, etc.

In the first class a sort of cooperation has for years existed between the oil industry and the oil burner manufacturers, in that both of us, in seeking a sale for our products, have met the same consumers, and have become mutually and helpfully acquainted.

In the second class, this cooperation began to fade away. The equipment manufacturer found himself alone in all his missionary and development work, and the oil man came along only when he was called.

In the third class, the oil burner manufacturer, far from receiving cooperation from the oil industry, encountered its active opposition. With the exception of a brief period between the spring of 1918 and the fall of 1919, the attitude of the oil industry has consistently been that of opposition to the extension of the use of oil fuel. After the equipment man has won his prospect to an oil burning advocate, the oil man needed only one opportunity to kill him off. The oil man's great weapon was, "No continuing supply."

Fuel Oil Supply

I well remember one bright afternoon in November, 1919, when a friend of mine in charge of the sales department of a large oil company called on the phone and suggested that I drop in to see him. Swelling with hope of a new "lead," I called at his office, only to be informed that "an inventory of the oil which they would have during the next year showed that it had all been contracted for" and that our salesmen should not in future mention his company as a source of supply. With much detail he told me of the situation in Mexico and in several of the fields of Texas, and in general of the passing away of any supply of oil that could be used as fuel.

Without delay I called on the sales offices of two other oil companies of my close acquaintance only to be forced to the conclusion that they had lunched together that day and were all of one mind.

We started our own investigation of the general subject of oil fuel supply, personally calling on geologists, producers and refiners from the Atlantic to the Pacific. We decided not to go out of the oil burner business. That the biggest oil companies in the world would not be contracting for tank steamers by the dozens if the game was up; that level headed oil companies would not be buying 1,200-acre tracts for the erection of new refineries unless there was a reasonable certainty of the growth of the business.

But what did the attitude of the oil industry do to the prospective customers of the oil burner manufacturers? I think it would be safe to say that from December, 1919, to January, 1922, the use of oil as fuel did not increase 10 per cent, if marine work is excepted. The trade journals of the petroleum industry were quoted by the newspapers and other trade journals in saying that oil as fuel was a thing of the past. Even plants which had equipped themselves for burn-

(Continued on Page 100)

STRENGTH

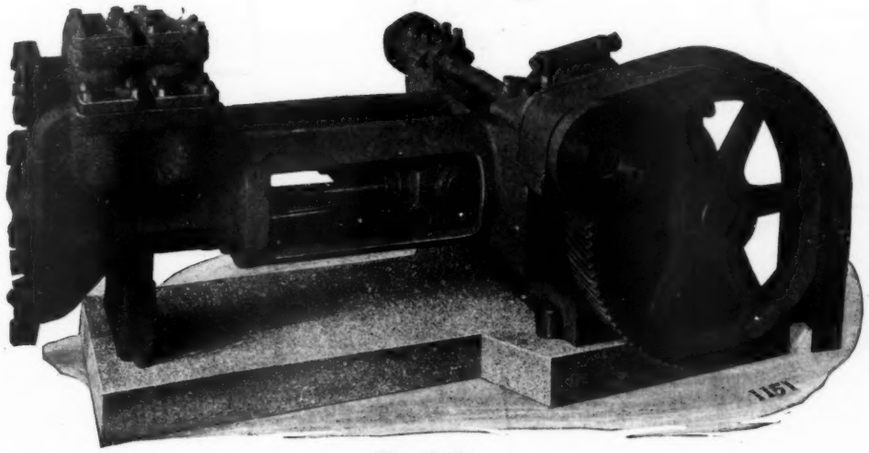


Fig. 1151

6 x 12" Slush Type for 250 lbs. working pressure. 245 barrels per hour.

Steel or bronze rods, cast iron or brass liners, and cast iron or brass pistons, as desired.

It only requires a glance to see great strength in every line and curve of this pump.

Built strong like all

Transit Pumps

to stand both use and abuse in the oil fields

Bulletin 105-A lists sizes and capacities

NATIONAL TRANSIT
PUMP & MACHINE CO.
OIL CITY, PENNSYLVANIA

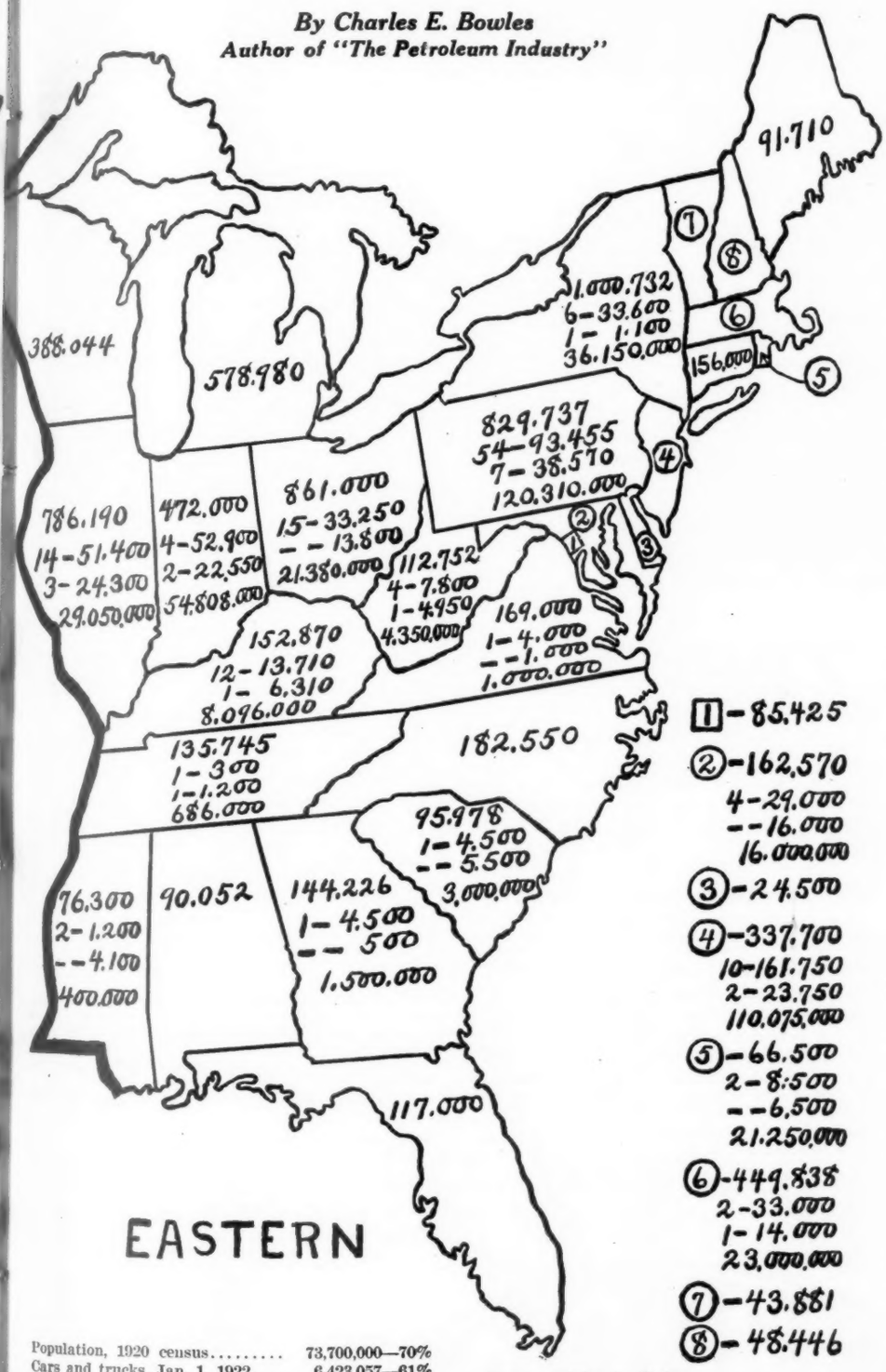
District Offices: **New York Philadelphia Pittsburgh Cleveland Kansas City Houston Denver**

Fundamentals of Petroleu

Population, 1920 census.....	6,000,000— 6%	Population, census 1920.....	3,000,000— 3%	Population, 1920 census.....	22,800,000—21%
Cars and trucks Jan. 1, 1922....	1,023,382—10%	Cars and trucks, Jan. 1, 1922.....	354,663— 3%	Cars and trucks, Jan. 1, 1922....	2,714,458—26%
Crude produced, 1922, bbl.....	139,671,000—25%	Crude produced, 1922, bbl.....	28,698,000— 5%	Crude produced, 1922, bbl.....	341,159,000—62%
Daily average, 1922, bbl.....	400,000	Daily average, 1922, bbl.....	78,000	Daily average, 1922, bbl.....	935,000
Refineries operating Dec. 31, 1922, with throughput.....	53—385,560	Refineries operating Dec. 31, 1922, with throughput	25— 68,310	Refineries operating Dec. 31, 1922, with throughput .....181—580,995	
Refineries shut down with total S. D. capacity	1— 25,700	Refineries shut down with total S. D. capacity	5— 58,840	Refineries shut down with total S. D. capacity .....155—674,325	
Total refineries and capacity....	54—411,260—16%	Total refineries and capacity....	30—127,150— 5%	Total refineries and capacity 336—1,255,320—50%	
Value of refineries Dec. 31, 1922..$145,500,000—15%		Value of refineries Dec. 31, 1922	$72,430,000— 7%	Value of refineries Dec. 31, 1922..$335,287,000—33%	
Gasoline produced, 1922, gal.....	693,497,748—11%	Gasoline produced, 1922, gal....	569,510.192— 9%	Gasoline produced, 1922, gal.....2,590,988,772—42%	
Indicated consumption, gal.....	522,000,000—10%	Indicated consumption, gal.	181,000,000— 3%	Indicated consumption, gal. ....1,384,000,000—26%	
Indicated SURPLUS, gal.....	170,000,000	Indicated SURPLUS, gal.....	400,000,000	Indicated SURPLUS, gal. 1,200,000,000	

Situation of United States

By Charles E. Bowles
Author of "The Petroleum Industry"



Population, 1920 census.....	73,700,000—70%
Cars and trucks, Jan. 1, 1922....	6,423,057—61%
Crude produced, 1922, bbl.....	41,669,000— 8%
Daily average, 1922, bbl.....	114,000
Refineries operating Dec. 31, 1922, with throughput .....133—532,865	
Refineries shut down with total S. D. capacity	18—184,330
Total refineries and capacity....151—717,195—29%	
Value of refineries Dec. 31, 1922..$450,980,000—45%	
Gasoline produced, 1922, gal.....2,348,237,901—38%	
Indicated consumption, gal. ....3,275,000,000—61%	
Indicated SHORTAGE, gal.....1,000,000,000	

Key to entries in States:

1st. line—Number of cars and trucks January 1, 1922. Total for United States, 10,515,560.

2nd. line—Number of refineries operating December 31, 1922, with throughput. Total for United States, 392 refineries—throughput 1,567,730 barrels.

3rd line—Number of refineries shut down December 31, 1922, with total shut down capacity. Total for United States, 179 refineries—shut down 943,195 barrels.

4th line—Value of refineries December 31, 1922. Total for United States, $1,004,197,000.

Eastern Section Is the Only Market—Mid-Continent Area Dangerously Overbuilt With Refineries

The chief value of statistics lies not so much in showing conditions as they exist today, for the work has already been done that the statistics tell about. Their chief value lies in their showing the great basic trends of industry—and the work that must be done—tomorrow.

The essence of statistics is not found in "the sixth place of decimals"—for the statistics of great nation-wide industries are, at best, only approximately accurate—and this "approximate accuracy" is especially true of the statistics of the petroleum industry.

As the industry is today slowly swinging from a very real overproduction to what appears will shortly become an underproduction, there is a strong tendency to question the accuracy of the peak figures of recent months. Five years ago we were stamped with the cry that "an oil famine is imminent"—but in the light of the intervening years we very naturally question the accuracy of the figures of the war-time period.

Sources of Figures Used

The figures used in this article have been drawn from the following sources: The population of the several States, from the United States census of 1920—the number of cars and trucks, from a survey made by "Automotive Industries" as of January 1, 1922; this checks closely, in total and in detail, with other generally accepted authorities. The production of crude oil is from the United States Geological Survey for 1922. The number and value of refineries, as of December 31, 1922, is taken from an article by H. G. James—these figures also check closely with those from other dependable sources. The production of gasoline is taken from the report of the United States Bureau of Mines for 1922. The indicated consumption for each of the four great consuming areas: Pacific Coast, Rocky Mountain, Mississippi Valley and Eastern, is based on the following summary for 1922 made by the United States Bureau of Mines:

Gasoline in 1922

	Gallons.
Stocks, January 1	586,087,132
Production 6,202,234,613	
Imports	56,471,436
Total 6,844,793,181	
	Gallons.
Stocks, December 31	883,792,861
Consumption 5,366,423,822	
Exports	594,576,498
Total 6,844,793,181	

The basic figures taken from the above summary are 5,366,423,822 gallons, which represents the consumption of gasoline for 1922. On January 1, 1922, there were 10,515,560 cars and trucks in the United States. Dividing the gallons consumed by the number of cars and trucks, we obtain about 510 gallons as the average consumption per car and truck for 1922. The number of cars and trucks in each of these areas was multiplied by 510 in arriving at the "indicated consumption" of gasoline for 1922—and it is very probably true that in the broad sense of the word, and not "the sixth place of decimals," these final figures are not very far wrong. When every one of our 48 States taxes gasoline—and there are not many "taxless" States left today—accurate figures as to localized and regional consumption can be easily tabulated.

Pacific Coast Area

This area, with 6,000,000 population, contains about 6 per cent of the people of the United States. They had, January 1, 1922, a few more than 1,000,000 cars and trucks, or about 10 per cent of all the cars and trucks in the United States. This area produced almost 140,000,000 barrels of crude oil in 1922, or an average of 400,000 barrels a day. It had 54 refineries with an aggregate rated capacity of about 411,000 barrels a day. Theoretically at least, this area was "well balanced," with a refining capacity a little greater than its daily production of crude oil. On December 31, 1922, all of these refineries, with one exception, were operating, with only about 6 per cent (25,700 barrels) of the aggregate capacity shut down. These refineries repre-

(Continued on Page 104)

Refinery Statistics for the Month of October, 1923

Compiled by W. C. Hill, Petroleum Economist

The production of gasoline in October was 659,060,570 gallons, a new record for output. This represents a daily average of 21,260,018 gallons. Imports during October were 20,001,431 gallons, which, added to production, shows a new supply of 679,062,001 gallons or a daily average of 21,905,226 gallons. Stocks on hand at refineries October 31, were reported as 946,872,683 gallons, showing a decrease during the month amounting to 25,832,149 gallons.

Domestic demand for gasoline during October showed a decrease of nearly 6 per cent, sales amounting to 617,699,699 gallons. Exports (including shipments to Alaska, Hawaii and Porto Rico) were 87,194,451 gallons. The total demand (domestic demand plus exports) amounted to 704,894,150 gallons, a daily average of 22,738,521 gallons which shows a decrease of nearly 7 per cent from the September demand. Refinery shipments of 684,892,719 gallons constituted 97 per cent of the total demand, imports making up the remainder. The new supply was only 96 per cent of the total demand, withdrawals from storage constituting the balance.

Gasoline—	Oct., 1923	Sept., 1923	Oct., 1922
Stocks first of month	972,704,832	1,053,856,221	690,050,809
Production	659,060,570	623,732,834	566,278,689
*Imports	20,001,431	26,140,649	721,126
*Exports	87,194,451	75,647,256	43,073,107
Indicated consumption	617,699,699	655,377,616	490,393,454
Stocks end of month	946,872,683	972,704,832	723,584,062
Kerosene—			
Stocks first of month	238,024,012	243,617,556	270,576,804
Production	191,346,325	193,687,612	215,203,483
*Imports	16,380	71	63,030
*Exports	79,977,081	81,748,283	84,332,437
Indicated consumption	124,455,627	117,532,944	145,253,404
Stocks end of month	224,954,009	236,024,012	256,259,423
Gas and fuel oils—			
Stocks first of month	1,481,203,993	1,462,182,129	1,364,957,161
Production	1,069,800,191	1,032,590,535	921,606,114
*Imports	32,421,329	28,972,094	21,976,068
*†Exports	131,109,471	118,546,662	3,270
Indicated consumption	1,016,726,028	923,994,153	63,315,723
Stocks end of month	1,436,591,014	1,481,203,993	876,474,781
Lubricants—			
Stocks first of month	215,013,179	220,419,457	214,727,811
Production	88,003,033	87,172,230	87,340,314
*Imports	2,017	6,058	
*Exports	25,590,031	31,207,245	26,556,172
Indicated consumption	58,942,940	61,377,321	57,739,601
Stocks end of month	218,485,258	215,013,179	217,775,134

*From Bureau of Foreign and Domestic Commerce. Exports include shipments to Alaska, Hawaii and Porto Rico.

†Does not include fuel or bunker oil laden on vessels engaged in foreign trade.

OUTPUT OF REFINERIES IN THE UNITED STATES DURING OCTOBER, 1923

	East Coast (N. Y., Phila. and Balto.)	Pennsylvania, N. Y., E. Ohio and W. Va.	Ind. and Ill., W. Ohio, Ky. and Tenn.	Oklahoma and Kansas	Texas	Louisiana and Arkansas	Colorado and Wyoming	California	Total	Daily Average Oct. 1923	Daily Average Oct. 1922
Oils run to stills, bbls.:											
Domestic crude	8,647,080	1,761,180	4,158,671	4,642,369	7,667,611	3,620,689	2,145,131	14,748,709	47,391,440	1,528,756	*
Foreign crude	2,159,970	.....	.....	.....	525,269	827,449	.....	.....	3,512,678	113,312	*
Total crude oils	10,807,050	1,761,180	4,158,671	4,642,369	8,192,870	4,448,138	2,145,131	14,748,709	50,904,118	1,642,068	1,426,097
Domestic partly ref. (net)	181,156	24,503	64,763	206,931	309,970	.....	717,385	.....	.....	.....	*
Foreign partly refined	349,567	.....	.....	.....	8,671	48,088	.....	.....	406,326	13,107	*
Casinghead gasoline	24,027	10,424	40,588	80,223	80,846	37,326	43,175	85,921	402,529	12,985	11,561
Total other oils (net)	554,750	34,927	105,351	287,153	399,487	85,414	760,560	85,921	808,855	26,092	159,121
Total oils run (net)	11,361,800	1,796,107	4,264,022	4,929,522	8,592,357	4,533,552	2,905,691	14,834,630	51,712,973	1,668,160	1,585,218
Output of refineries:											
Gasoline, gals.	134,782,458	26,373,713	85,407,660	81,858,426	116,575,088	41,857,152	53,071,473	119,134,600	659,060,570	21,260,018	18,267,964
Kerosene, gals.	48,061,456	13,636,510	18,372,126	21,404,181	38,821,373	24,853,635	10,728,343	15,468,701	191,346,325	6,172,462	6,942,847
Gas and fuel oils, gals.	215,886,142	13,786,740	51,480,641	85,207,960	157,624,974	80,802,386	51,094,254	413,918,093	1,069,800,191	34,509,684	29,728,229
Lubricants, gals.	24,951,093	13,949,277	8,342,195	6,472,224	21,735,992	2,496,926	1,774,322	8,281,004	88,003,033	2,838,807	2,817,446
Wax, lbs.	14,316,382	7,271,772	2,922,446	3,418,182	4,872,079	4,226,279	1,692,248	.....	38,719,388	1,249,013	1,099,874
Coke, tons	14,951	1,461	15,459	5,106	4,352	8,138	6,835	.....	56,302	1,816	1,304
Asphalt, tons	117,423	610	11,685	.....	35,314	38,965	2,727	44,186	250,910	8,094	6,313
Other finished prod., gals.	3,766,896	1,302,873	3,356,433	897,578	31,899	1,547,297	194,107	5,591,284	16,688,367	538,334	*
Losses, bbls.	411,739	113,218	115,087	219,673	389,392	67,333	56,898	216,726	1,590,066	51,292	52,041
Partly ref. prod. (net), gals.	.....	.....	.....	.....	.....	24,743,424	.....	41,250,730	2,796,418	90,207	*

*Not available prior to 1923.

STOCKS AT REFINERIES IN THE UNITED STATES, OCTOBER 31, 1923

	East Coast (N. Y., Phila. and Balto.)	Pennsylvania, N. Y., E. Ohio and W. Va.	Ind. and Ill., W. Ohio, Ky. and Tenn.	Oklahoma and Kansas	Texas	Louisiana and Arkansas	Colorado and Wyoming	California	Total Stocks Oct. 31 1923	Total Stocks Oct. 31 1922
Crude oil and partly ref. prod., bbls.:										
Domestic crude, bbls.	6,291,813	1,338,947	1,280,192	4,714,778	4,668,923	4,242,503	810,971	6,647,300	29,995,427	*
Foreign crude, bbls.	1,906,492	.....	.....	.....	309,556	1,457,685	.....	.....	3,673,733	*
Total crude oils, bbls.	8,198,305	1,338,947	1,280,192	4,714,778	4,978,479	5,700,188	810,971	6,647,300	33,669,160	32,705,842
Domestic partly refined, bbls.	5,348,196	750,824	2,073,256	1,725,527	5,287,297	2,828,338	1,846,144	11405,536	31,265,118	*
Foreign partly refined, bbls.	28,697	.....	.....	.....	60	.....	.....	.....	28,757	*
Total other oils, bbls.	5,376,893	750,824	2,073,256	1,725,527	5,287,297	2,828,338	1,846,144	11,105,536	31,265,118	*
Total oils to be run, bbls.	13,575,198	2,089,771	3,353,448	6,440,305	10,265,836	8,528,526	2,657,115	18,052,836	64,963,035	33,985,945
Finished products:										
Gasoline, gals.	188,829,420	19,610,483	106,741,324	155,166,463	115,607,052	94,804,555	107,681,935	158,441,451	946,872,683	723,584,062
Kerosene, gals.	56,843,682	12,591,984	40,958,066	16,886,865	45,507,841	21,664,995	5,733,500	24,867,076	224,954,009	256,259,423
Gas and fuel oils, gals.	316,657,770	32,334,222	36,437,045	97,771,531	264,665,967	73,429,647	38,823,077	575,571,755	1,436,691,014	1,368,746,810
Lubricants, gals.	93,716,617	28,288,001	19,140,657	11,213,083	45,301,684	2,644,995	5,464,079	12,716,142	218,485,258	217,775,134
Wax, lbs.	59,936,191	19,402,415	29,255,027	4,308,474	10,188,357	45,521,959	4,722,224	198,581	173,532,228	207,356,622
Coke, tons	4,936	94	5,016	28,201	1,044	.....	3,683	.....	42,974	33,491
Asphalt, tons	56,386	2,579	9,446	188	10,842	12,067	2,762	13,197	107,467	114,978
All other finished products, gals.	5,463,312	1,114,670	14,609,680	4,946,669	93,878	434,918	1,084,717	291,897	28,039,741	*

*Not available prior to 1923.

PRODUCTION OF NATURAL-GAS GASOLINE IN 1922

The quantity of raw (unblended) natural-gas gasoline produced in the United States in 1922 amounted to 505,832,000 gallons, having a value at the plants of $72,711,063, an average of 14.4 cents per gallon, according to a statement issued by the Department of the Interior through the Geological Survey. In the production of this gasoline some 545,000,000,000 feet of natural gas was treated, approximately 72 per cent of the total quantity marketed for the year, representing an average yield of 0.9 gallons of gasoline per 1,000 feet of gas. Compared with results in 1921 the production of natural-gas gasoline increased 12 per cent; the production by absorption methods increased 74 per cent, the production by compression methods decreased 10 per cent, and the production by combination plants (using absorption and compression methods) increased 29 per cent. Gasoline produced from natural-gas in 1922 was equivalent to approximately 8 per cent of the quantity produced in the United States from petroleum.

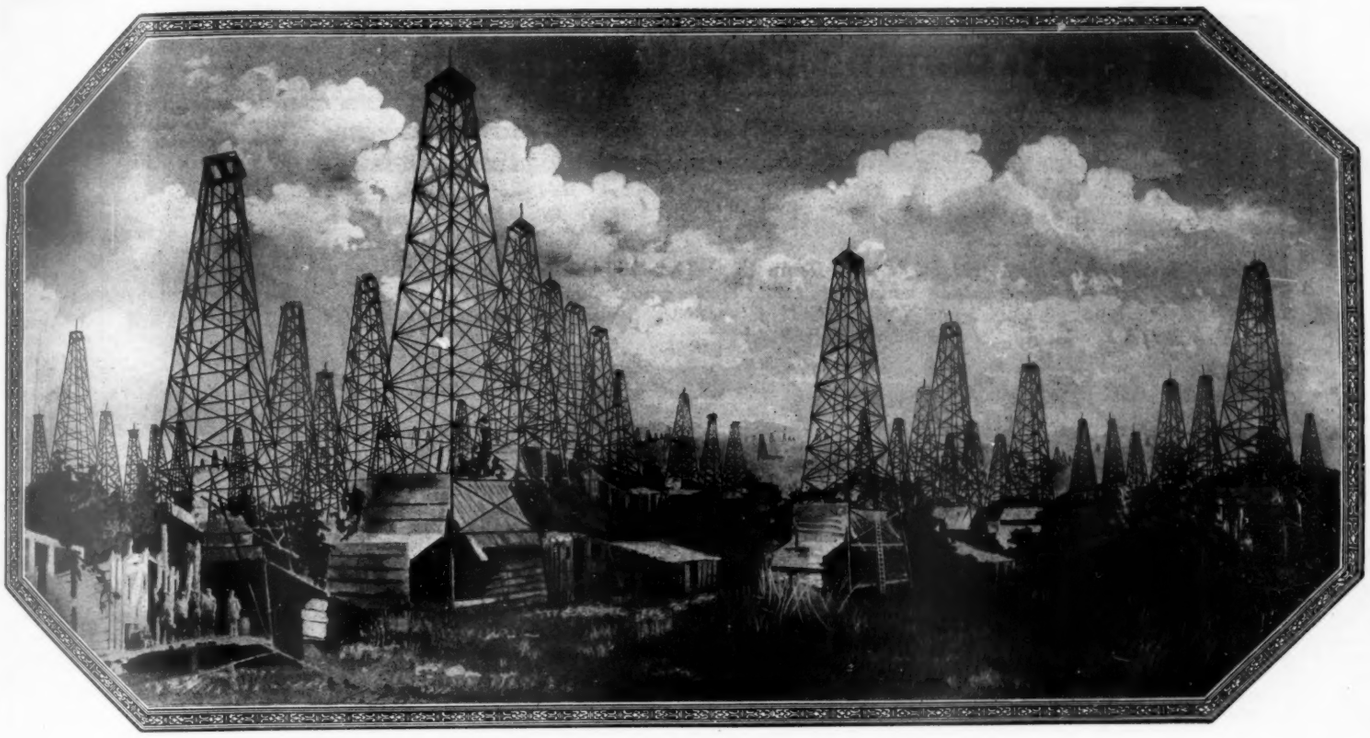
The following tables were compiled by E. M. Seeley from reports of 402 producers:

RAW (UNBLENDED) GASOLINE PRODUCED FROM NATURAL GAS IN THE UNITED STATES IN 1922

State—	Number of Plants Reported: Compression	Absorption	Combination	Total	Raw (Unblended) Gasoline Produced (Gallons): By Compression	By Absorption	By Combination	Drip	Total	Value at Plants	Average Val per Gallon (Cents)
Oklahoma	197	69	1	267	138,906,380	48,871,706	956,300	669,284	189,403,670	$24,914,048	13.2
Texas	34	20	2	56	62,795,311	31,778,874	645,769	185,539	95,405,483	12,114,952	12.7
California	27	36	14	77	22,568,064	23,957,658	20,314,017	289,961	67,119,700	11,868,152	17.7
West Virginia	85	56	10	151	12,590,768	41,090,236	2,905,960	208,749	56,795,713	9,770,884	17.2
Louisiana-Arkansas	13	10	4	27	8,998,040	13,016,234	11,213,963	467,000	33,695,237	4,742,146	14.1
Wyoming	4	1	..	5	19,869,377	97,726	.....	.....	19,967,103	2,261,329	11.3
Pennsylvania	168	27	..	195	9,115,645	9,345,221	.....	57,265	18,518,131	3,144,545	17.0
Ohio	29	12	..	41	1,333,811	7,253,645	.....	12,840	8,600,296	1,300,929	15.1
Illinois	78	..	..	78	7,752,396	.....	.....	7,615	7,760,011	1,181,797	15.2
Kentucky	5	3	..	8	560,581	4,644,302	.....	.....	5,204,883	925,810	17.8
Kansas	5	3	..	8	908,590	1,928,454	.....	18,529	2,855,573	436,056	15.3
New York	3	1	..	4	281,200	225,000	.....	.....	506,200	61,415	12.1
1922	648	238	31	917	285,670,163	182,209,056	36,035,999	1,916,782	505,832,000	72,711,063	14.4
1921 (revised)	847	153	28	1,058	316,124,649	104,493,519	27,980,182	1,336,052	449,934,402	61,815,258	13.7

NATURAL GAS TREATED FOR GASOLINE, AVERAGE YIELD, AND STOCKS OF GASOLINE, 1922

State—	Estimated Quantity of Natural Gas Treated (M Cubic Feet): Compression	Absorption	Combination	Total	Average Yield in Gallons per (M Cubic Feet): Compression	Absorption	Combination	All Methods	Stocks of Natural-Gas Gasoline (Gallons): Jan. 1	Dec. 31
Oklahoma	45,877,533	48,292,795	629,625	94,799,953	3.03	1.01	1.52	1.99	4,352,467	4,557,488
Texas	12,242,870	38,075,041	925,500	51,243,411	5.13	.83	.70	1.86	1,895,379	1,903,762
California	16,239,625	21,667,704	24,088,158	61,995,487	1.39	1.11	.84	1.08	526,362	515,601
West Virginia	7,131,093	161,464,086	4,543,534	163,138,713	1.77	.27	.64	.35	1,147,832	2,222,140
Louisiana-Arkansas	1,877,599	43,672,100	2,787,605	48,337,304	4.79	.30	4.02	.69	233,551	433,177
Wyoming	5,551,856	792,389	.....	6,344,245	3.58	.12	...	3.15	127,007	186,391
Pennsylvania	4,937,178	46,391,543	.....	51,328,721	1.85	.20	...	.36	956,290	921,666
Ohio	582,030	36,555,133	.....	37,137,163	2.29	.20	...	.23	159,871	254,963
Illinois	3,231,487	.....	.....	3,231,487	2.40	...	...	2.40	141,300	113,170
Kentucky	106,950	18,016,562	.....	18,123,512	5.24	.26	...	.29	354,765	568,649
Kansas	302,520	7,885,268	.....	8,187,788	3.00	.24	...	.35	159,401	36,469
New York	152,188	1,119,403	.....	1,271,691	1.85	.20	...	.40	1,000	8,100
1922	98,232,939	413,932,024	32,974,422	545,139,375	2.91	.44	1.09	.92	10,055,225	11,722,356
1921 (revised)	134,766,905	314,714,365	26,616,240	466,097,490	2.53	.33	1.09	.96	No record	



HOW *ONE* MOORE DERRICK SAVED $25,000

The above view is of *one* Moore derrick, duplicated 66 times, to represent each of the 66 wells it has drilled for its owners, the Ebenezer Oil & Gas Co., Wellsville, N. Y.

ONCE upon a time an oil operator was about to drill a well. A salesman knocked at his door and was admitted. He was a bold salesman, for he attempted to persuade the oil man to buy a derrick of steel. Everybody who knew anything about drilling wells, said it was a crazy idea to use a steel derrick. Moreover, the price was high—nearly double the price of a wood derrick.

But this oil man had a bold and venturesome spirit. So he bought the steel derrick. Since that time, this same derrick has drilled 66 wells and it is still in use. The total repair cost has been less than twenty dollars. So the derrick cost per well has been less than ten dollars, saving several hundred dollars per well, compared with a wood derrick.

Roughly estimated, the total saving for the 66 wells must have been from $20,000 to $30,000. If present lumber and labor costs continue, the future saving, with such a record, would be more like $50,000.

Everybody will admit a wood derrick has some good features. For instance, you can drive a nail anywhere and hang your hat on it. But weigh its ultimate cost against that of a steel derrick, and you will be forced to admit that you are paying too much for the luxury of using wood derricks for drilling, pumping and casing pulling operations. Bear in mind, too, the increased strength of the steel tube over wood.

LEE C. MOORE & CO., Inc.

PITTSBURGH *Established 1907* PENNSYLVANIA

Branch Offices and Warehouses

Midwest Bldg.
Casper, Wyo.

Atlas Life Bldg.
Tulsa, Okla.

Magnolia Bldg.
Dallas, Texas

P. O. Box 339
Shreveport, La.

Union Trust Bldg.
Parkersburg, W. Va.

MOORE TUBULAR STEEL DERRICKS

Branch Offices and Warehouses

California Representatives

Buck & Stoddard
Los Angeles: 3354 E. Slauson Ave., Box 720, Arcade Sta.

San Francisco Address: 485 California Street.

Wyoming Field Operations

By F. B. Taylor

Salt Creek test indicates 155,000 bbls. Mammoth Co. has 250-bbl. well on Teapot. Activity in San Juan country, Utah. Three completions in Cat Creek, Montana, all small. Mountain & Gulf gets 2,000-bbl. well and Continental Oil Producing Co. 1,400, both Salt Creek.

CASPER, Wyo., Dec. 8.—Interest is centered in the development of the Wellington area in Colorado and the other fields with the exception of Salt Creek are quiet. Salt Creek is active due to the order to start production at 100 per cent. The big gasser at Wellington, that caused all the excitement is still blowing out and now an attempt is being made to put cement in between the casing strings and cement the whole together with a large block of concrete around the top.

According to the latest dope on the structure, there are 2,100 acres on this dome that will be found available for oil or gas production. Then there is an area of questionable productiveness and an area known to be barren around the outer edge of the dome. The Fort Collins Dome lying south of the Wellington structure contains around 1,400 acres and some other small domes exist close by that may also be found productive.

Max W. Ball, well known geologist, who is familiar with the Wellington region through having surveyed that territory thoroughly for the Roxana interests several years ago, predicts a bright future for the district. He considers the Fort Collins Dome south of the Wellington structure has as good indications on the surface as the Wellington Dome.

No Oil Yet at Fort Collins

The crew working with the well used gas masks of the regular army type obtained from Fort D. A. Russell at Cheyenne. The crew was also equipped with slickers on account of the heavy precipitation of naphtha condensing from the flow of gas.

This condensation amounts to about 150 bbls. daily, it is estimated, and has led to several wild rumors that the well is going on to oil. The Oil and Gas Journal correspondent has made careful investigation of this point and up to this date, the well has not produced any crude oil, although the gasoline naphtha content of the gas is great enough to make an appreciable condensation when it expands in the atmosphere at the surface.

It would be a great thing for northern Colorado if this well were to come in as flowing oil, but the promoters and others interesting are leaving no stone unturned to make this probability a certainty. The area about Fort Collins and Wellington is always referred to as the "oil" field, or sometimes the "oil and gas field" and even the Colorado newspapers refer to it in these terms, although there has been no indication yet of any oil in the whole area. It is also going to be interesting to watch the outcome of the trouble brewing between the blue sky service of Colorado and promoters preparing to sell shares in holdings anywhere within a radius of 50 miles of the well where they can obtain tracts that have a title to the minerals under the surface. From indications the Colorado authorities are preparing to block these attempts to unload worthless securities on the public.

The Union Pacific is starting a survey for a branch line into the area in case the field assumes sufficient proportions to warrant a railroad. This survey is starting out of Fort Collins as the connecting point and is to reach the Buckeye ranch about 18 miles north.

Salt Creek 155,000 Barrels

Since the order for the production of the Salt Creek Field at capacity, that area has gradually increased its production until now the field is capable of about 155,000 bbls. daily and shows signs of going over this figure shortly. One of the obstacles to the production of Salt Creek after the gas pressure is exhausted, according to experts, is the paraffin. Salt Creek crude contains a larger paraffin content than any other oil in the Rocky Mountain region and this is going to cause trouble as soon as the gas pressure is off the sand. About the only remedy proposed so far is heating of the oil in the wells by some method and electric heaters are being considered as the best means of accomplishing this end.

The statement of M. J. Foley, supervisor of the Salt Creek Field for the Salt Creek Producers Association, that there will be 600 wells drilled in Salt Creek the coming year has occasioned much comment here. This figure is generally thought to be high, for to accomplish this end, a great number of strings of tools must be moved into the field. At present there are around 700 wells and these make up the drilling work since 1916, or about seven years' intensive work and to attempt suddenly to practically double this amount in one season would call for a drilling campaign on a scale never before attempted.

It may be that Mr. Foley is basing his statement of 600 wells on the showing made by the rotary outfit now being tested by the Midwest and if every firm in the field were to put on rotaries, the 600 wells might be drilled next season but this procedure would mean the junking of a tremendous lot of cable tool outfits.

Field Developments

The Marine Oil Co. is cleaning out on the two wells on Section 5-39-78 in the Salt Creek Field and is setting the 6½-inch casing on top of the second Wall Creek sand on Section 8-39-78. This last hole is at 2,653 feet and on the adjoining Section 9-39-78, the Marine has its first well down to 885 feet and making hole.

On the Sheldon Dome, about 50 miles north of Riverton in Fremont County, the hole has been cleaned of the collapsed casing and a new string of 8¼-inch casing is being run with the bottom of the hole at 3,200 feet. This country suffered a severe wind storm Thursday night and the storm collapsed all the camp buildings at the Sheldon Dome, leaving the crew without shelter and about 25 miles from the nearest habitation. No one was injured. They went to Pilot Butte camp for shelter.

The Mammoth Oil Co. completed a new producer on Section 27-39-78 in the upper end of the Teapot Dome that is making 250 bbls. after a shot. The depth is 2,982 feet and the production is coming from the second Wall Creek sand.

The construction work at the Parco refinery of the Producers & Refiners was shut down a month ago for the winter. Now orders for a general resumption in spite of the weather has been received and calls for 500 men have been put out.

The Midwest well drilling on Section 11-17-104 in the Baxter Basin Field in Sweetwater County has been showing oil at times, but the crew reports this showing is from the shale and not from the producing sands. The drill is above any of the sands expected to contain petroleum in commercial quantities.

The Sinclair Pipe Line Co. will move its construction camps near Douglas to near the eastern Wyoming line, where the pipe line will cross into Nebraska. That part of the line from the Teapot Dome to about the State line crossing between Wyoming and Nebraska has been completed with the exception of some backfilling and the next link to be constructed is from the Wyoming line through Nebraska.

The gasoline-electricity-carbon black plant being tried out in the Lance Creek Field in Niobrara County has repaired the boiler trouble experienced last week and is operating again. This plant is expected to generate electricity through the use of the pressure of gas as it comes from the well, then the gasoline content of the gas is extracted and the residual gas is burned against rotating iron cylinders containing water. The water in these cylinders is in turn changed to steam and this steam is made to produce more electricity while at the same time, the carbon that collects on the cylinders is collected as carbon black. The attitude here regarding the plant is that it embodies a plausible theory but it remains to be seen whether it can be made to produce on a commercial scale.

Get 2,000-bbl. Well

On Section 13-40-79, in the Salt Creek Field, the Mountain & Gulf completed its No. 1-A to the second Wall Creek sand at 2,160 feet and the well showed for a small producer. It was shot and immediately started off at 2,000 bbls. and is holding up at that figure.

In the same field the Continental Oil Producing Co. on Section 18-39-78, in the south end of the field, has a fine producer in the second Wall Creek sand at 2,275 feet, starting off at 1,400 bbls., which boosts the Continental's production to around 6,000 bbls. daily.

The field work in practically all the wildcat districts is shut down and reports are routine.

The Utah country is showing some activity at present, the Midwest putting down a well at Boundary Butte Dome in the San Juan country and several other companies are active there, the Monumental Oil Co. has a well drilling at 1,300 feet with a diamond drill outfit and the Southern Utah Oil Co. has taken up a large acreage of leases on the north side of the San Juan River and will move in a rig shortly.

The San Juan Oil & Development Co. is starting a well on what is considered a new structure about 6 miles south of the Monumental Oil Co.'s location and the syndicate formed by Wilson, Crammer & Co. of Denver is close to the Honaker sand with a diamond drill outfit. The Texas Co. has a large area under lease in the San Juan district and across the line in New Mexico the larger firms are active while lands are eagerly sought after by the small fry.

Two sands are expected to hold petroleum in the San Juan district, the Honaker sand is expected about 1,500 feet and the Hulkito sand lies about 250 feet under the Honaker or around 1,800 feet. pose of sinking wells. Present produc-

Sunburst Completions

In the Montana fields, Sunburst, in Toole County, reports three completions, all producers. The Campbell Oil Syndicate well on Section 25-35-3w struck the Ellis sand at 1,530 feet and is a producer estimated at 50 bbls. from that formation, this extends the field somewhat to the northwest.

The Montana Giant Petroleum Co. drilled in another producer on Section 8-35-2w and found the Ellis sand at 1,700 with 10 feet of pay below that depth. This well is estimated at 50 bbls. also. On Section 11-35-2w, the Stapleton Oil Co. found the Ellis sand at 1,630 feet and a good producer that will make around 40 bbls. This makes 139 producing wells in the Sunburst Field, but owing to the low market and small demand for this crude, most of the field is shut down with all available storage full of oil.

The Shelby Syndicate succeeded in putting out the gas fire at the firm's well on Section 23-33-1w and is preparing to drill the hole to the Ellis sand. Seven strings of tools are active in the Sunburst Field while 11 are shut down for various reasons and probably will not be active until spring.

Cat Creek

In the central part of Montana, the interest about Cat Creek is centered in the proposition to make a new county of the eastern part of Fergus County. The new county will have the name of Petroleum and will take in the Cat Creek Field and have Winnett as the county seat.

Work in the Cat Creek Field is routine, a few wildcats are still at work but in the main, the wells are shut down until spring.

The Wilson Fisher well on Section 30-15-26, southwest of Cat Creek Field about 10 miles and drilling with a machine, has a showing at 410 feet. The crew hopes to make into a commercial producer. The first Kootenai sand is expected around 500 feet.

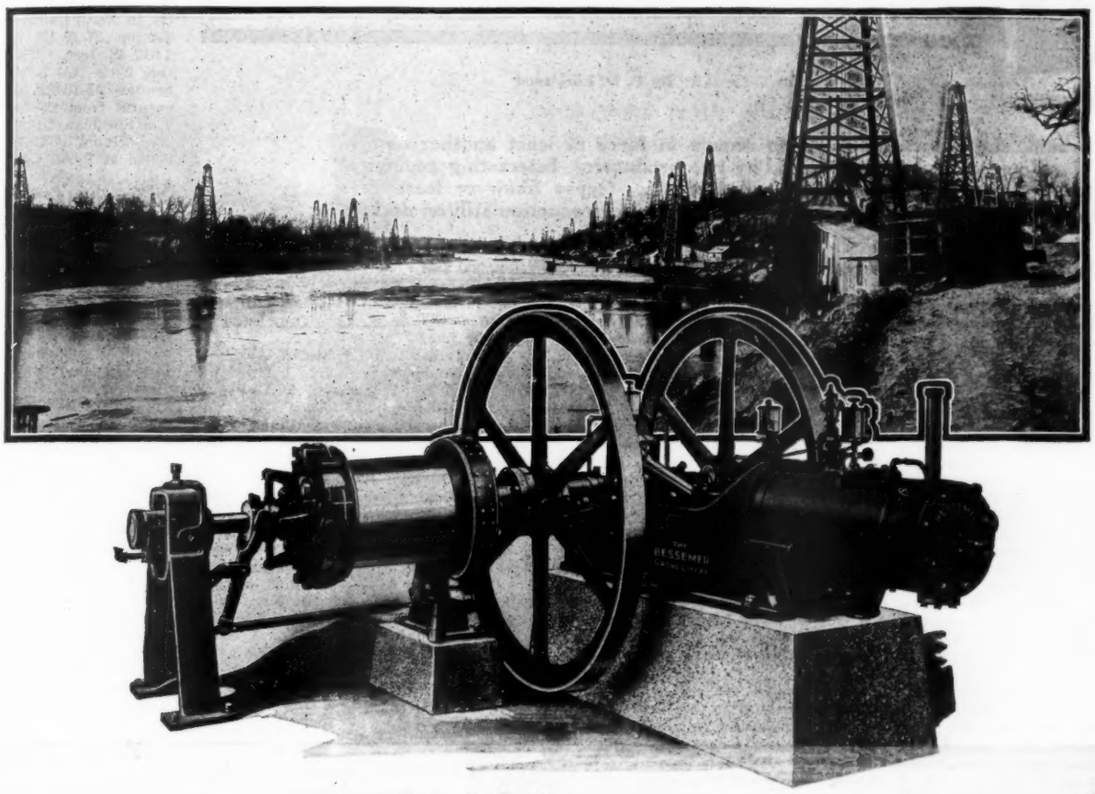
The Neudigate Oil Co. wildcat on the Flatwillow Dome near Cat Creek Field is down around 1,800 feet and drilling and the Tensleep sand is expected within the next 100 feet. This sand is expected to be around 170 feet in thickness.

The Peerless Oil Co.'s No. 2 in the Cat Creek Field, Section 9-15-27, is on top of the first sand at about 1,400 feet and drilling; the California well No. 2 in the west extension of the Cat Creek Field, on the Greene ranch is rigging up.

The Soap Creek Field just north of the Wyoming line is shut down and has been since last summer. While the oil from the Soap Creek Field is exceptionally good for highway work, the refineries are putting out a lot of residuum that can be utilized for this purpose and will unload their products before the fields will be called upon for more production. Devils Basin, another of Montana's heavy oil fields, is also completely shut down with no immediate prospects of being produced. Devils Basin is in southern Fergus County and Soap Creek is south of Hardin in Big Horn County.

The Casper refinery of the Standard of Indiana is building a new battery of asphalt stills and will manufacture all

(Continued on Page 101)



Not "*too many triggers*"

We asked the Superintendent of Production of a company which is one of the largest buyers of Bessemer Engines just why he chose the Bessemer.

His answer was brief and to the point.

"It hasn't too many triggers."

Then he went on to say that long experience had exclusively proved to them that Bessemers, because of their simplicity, meet oil-field conditions better than any other engine they had tried—"and we've tried them all."

It doesn't take an expert to make a Bessemer operate—dependable performance *is built into them.* Buy performance—not "triggers"—buy Bessemers.

THE BESSEMER GAS ENGINE COMPANY
58 York Street Grove City, Pa.

BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

Oklahoma Field Operations

By C. D. Lockwood

Burbank shutdown agreement to remain in force at least another month. Tulsa Country Club Pool enlarged by two producers. Interesting geological test in Osage finds granite at shallow depth. Gypsy Shawver lease gets another 1,500-bbl. gusher. Burbank and Wewoka production still on decline.

The situation in Oklahoma fields remained practically unchanged during the past week, with some indications of renewed activity and a slight increase in field operations, but with the majority of operators inclined to sit tight for a time until the industry gets a little farther out of the woods.

This feeling was expressed at a meeting of Burbank operators who were called together in Tulsa Saturday to discuss the threatened break of the shutdown agreement, and it was decided to extend the "gentlemen's agreement" until January 10, when another meeting will be held. At the present time, all wells included in the original agreement, and which will not be impaired by such action, will be shut down now, and all others will be shut down at the next casing partition point. This does not include the north half of Section 4, but it was not included in the original agreement.

The Burbank production for the week ended December 5, showed a further decline of 5,229 bbls., the production for that week being 78,881 bbls. daily from 1,113 wells, the same number that were producing the previous week.

The Tonkawa Field registered another slight increase, the daily average production amounting to 48,346 bbls., a gain of 597 bbls. over the week before. This was due to the fact that 7 more wells were contributing to the field's production, the number of producers at the end of the week being 603.

Tulsa County Pool

An interesting little pool is being drilled in Tulsa County, within 2 miles of the oil capital. Munn Brothers, Glidden and the Westland Oil Co. brought in their No. 4, SW cor. NW NE, Section 28-20-12, which started off at the rate of 100 bbls. an hour from the pay sand found at 2,045 feet. The first Wilcox sand was picked up at 1,943-46 feet, and sandy lime at 1,975 feet. The hole was being deepened Monday to 2,062 feet and was estimated as making 1,200 bbls. The same interests' No. 3, one location south of No. 4, which came in recently, was making 750 bbls. daily. No. 1 on the same lease, brought in about two years ago, and No. 2 is just about a year old. The Peer Oil Corp.'s No. 3, which offsets the Munn Brothers' No. 3, found several streaks of pay sand from 1,972 feet to 2,056 feet, where it had a hole full of oil and shot the oil over the top of the derrick once, following the bailer out. It was estimated as good for 30 bbls. at the time, but was to be cleaned out. The Peer Oil Corp. also has two new locations on this lease. Munn Brothers' No. 5, one location north of their No. 4, had completed a fishing job and was trying to mud off gas at 1,630 feet.

An interesting well from a geological standpoint is the Dixie Oil Co.'s No. 7, CEL SE, Section 30-24-11, Osage County, which ran into granite at 1,745 feet after going through 200 feet of Mississippi lime. The Wilcox sand was missing from the formation, as was also the Cambro-Ordovician, which is usually found below the lime. The hole was drilled to 1,866 feet and they were trying to make a gasser out of it, 40,000,000 feet having been found in the Burgess sand above the lime. This is the third well on the lease originally owned by the Homa-Okla Oil Co., No. 6 having been completed as a gas well in the Oswego sand, and No. 7 having lost the hole.

Two other wells in the Osage found granite around 3,300 feet, one now owned by the Prairie Oil & Gas Co. in the SE of Section 25-23-8, and another belonging to the Riverland Oil Co. in the NW of Section 14-22-8, but the Dixie well is unusual because of the shallow depth at which the granite was discovered.

The Wewoka Field brought forth nothing of interest during the week, and the daily average production fell to 15,334 bbls., a decline of 1,655 bbls. from the figures for the previous week. The number of producing wells remained the same. W. R. Ramsey's No. 1 Dindy, NW cor. Section 6-7-8, which encountered several showings of oil from 2,925-54 feet, was on top of another sand at 3,595 feet.

The Gypsy Oil Co. shot a well into a 1,500-bbl. producer in the Tonkawa Field on its Shawver lease in Section 2-24-1w, Noble County. It was No. 75, NE SW NW, Section 2, and was given 80 quarts in sand at 2,100-25 feet.

The total number of operations in the State made a gain of 7 during the week ended December 1, when there were 66 locations, 217 rigs, 554 wells drilling and 450 wells shut down, making a total of 1,287 operations. This shows, in comparison with the previous week a decrease of 1 location, and 19 wells shut down, with an increase of 27 wells drilling, the number of rigs remaining the same.

Carter County

In Carter County, the Magnolia Petroleum Co.'s No. 1-A Smith, C SW SW SW, Section 24-2s-3w, made 19,000,000 feet of gras from sand at 1,664-71 feet. B. A. Simpson topped the pay sand in his No. 2-A Lowery, C SW SE NE, Section 9-4s-2w, and the well was making 720 bbls. with the bit 7 feet in. The Magnolia Petroleum Co.'s No. 18 Woodruff, CSL SE SW, Section 15-4s-2w, an old well, was a 2,500,000-foot gasser in sand from 2,403 to 2,408 feet. The same company abandoned the rig that was up for No. 25, CNL NW SE SW, Section 15-4s-2w. Westheimer was swabbing 70 bbls. of oil from his No. 4 Mullen, CEL NE NE, Section 16-4s-2w, the sand depth being 2,340-48 feet. Total depth was 2,460 feet.

In the Healdton district, the Lawrence Oil & Gas Co. was spudding No. 27 Hicks, C NW NW NE, Section 9-4s-3w.

Southwest of Ardmore, the Magnolia Petroleum Co. had a failure, abandoning its No. 1 Johnson, CEL SW SW NW, Section 17-5s-1e, at 3,333 feet.

In Okfuskee County, the Link Oil Co.'s No. 1 Hicks, SE cor. SW, Section 4-13-8, picked up the pay sand at 3,475 feet and at a total depth of 3,484 feet was making 850 bbls. natural. The sand was very hard and gravity of the oil was 37.8.

Burton and others' No. 1, SE cor. NE NE, Section 1-12-11, an old well, was good for 275 bbls. natural from sand at 2,538-75 feet. Waite Phillips' No. 6 Barnett, SW cor. NW NE, Section 13-11-11, also an old well, which was formerly a 7,000,000-foot gasser from sand at 2,751-58 feet, has been exhausted to 2,000,000 feet. The Kingwood Oil Co.'s No. 4 Barnett, NE cor. NW SE, Section 24-11-11, another old well, was still good for 15,000,000 feet of gas from sand at 2,761-67 feet.

In McIntosh County, Jordan, Ashley & Evans abandoned their No. 1 Hawkins, SW cor. NE SW, Section 20-12-14, as dry at 2,970 feet.

Other Development Work

In Pontotoc County, Delaney & Smith abandoned as dry at 807 feet their No. 1, SE cor. SW NW, Section 1-4n-8e.

In Tillman County, the Oklahoma-Texas Refining Co.'s No. 2 Owens, CEL SE SE NE, Section 7-5s-14w, was good for 100 bbls. of 40 gravity oi, from sand at 1,522-34 feet. The same company was drilling another well in the same section, No. 4 Owens, CWL SE SE NE, which was down 800 feet. In Section 8-5s-14w, the Continental Oil Co.'s No. 5 River Bed, CWL SW SW NW, was drilling at 300 feet, and the Marshall Producing Co.'s No. 1-A River Bed, CWL SW NE NW, at 1,300 feet.

In Dewey County, A. D. Morton junked the hole in his No. 1 Elders, C SE, Section 22-16-18w, and abandoned it at 400 feet.

In Garvin County, the Magnolia Petroleum Co.'s No. 2 Mauldin, CWL NW NW SE, Section 16-1n-3w, was good for 120 bbls. in sand found at 1,582-1,602 feet. Gumm Brothers abandoned their No. 1 Grey, SE cor. NW, Section 5-3n-3e, as a failure at 2,920 feet.

In Beckham County, the Magnolia Petroleum Co. had a duster for No. 1 Donaldson, C SW SW NW, Section 16-9-23w, being dry at 3,917 feet. A rig was built for Cravey & Caudell's No. 1 Hickey, SE cor. NW SW, Section 20-9-23w, and H. E. Heydrick was running the 12-inch casing to 240 feet in his No. 1 Hackathorne, C NW SW NW, Section 23-9-23w.

In the Panhandle, the Empire Gas & Fuel Co. abandoned as dry at 3,537 feet its No. 1 James, NE cor. SW, Section 6-1n-20e.

In Roger Mills County, the Colorado Oil Co. was spudding its No. 1 Cantrell, C NE NE, Section 32-16-22w.

Duster in Pawnee

In Pawnee County, the Magnolia Petroleum Co.'s No. 1 Robedeaux, CEL SE SE, Section 32-23-3e, was a failure at 4,170 feet. The same company was drilling deeper in an old well, No. 2 Robideaux, SE cor., same section, at 2,825 feet. The Watchorn Oil Co. was rigging up to deepen its No. 4 Miller, SW cor. Section 33-23-3e, an old well.

In Payne County, the Colorado Oil & Gas Co. spudded No. 1 John Goff, NW cor. SE, Section 2-20-2e, 10 feet and shut down. Herpst Brothers' No. 1 Falls, C SE NW, Section 32-18-4e, an old well, was abandoned as dry at 3,815 feet.

In Stephens County, the Skelly Oil Co.'s No. 18 Franklin, NE cor. SE, Section 35-1s-5w, was a 10-bbl. producer from sand at 727-40 feet. Sapping and others' No. 2, CWL SW NE NW, Section 2-2n-5w, was shut down for funds.

In Okmulgee County, the Sheridan Oil Co.'s No. 3 Willis, SE cor. SW SW, Section 22-16-12, was good for 150 bbls. natural from sand at 2,539-49 feet, and No. 4 Willis, NW cor. SW SW, same section, was a 50-bbl. producer from the sand at 2,528-36 feet. O. W. Dickerson and others were building a rig for their No. 1-A Flynn, SE cor. NE, Section 22-16-12. The Sinclair Oil & Gas Co. and others were spudding their No. 2 Gamble, NE cor. SE SE, same section.

A well that made 200 bbls. natural was brought in by the Independent Oil & Gas Co. in No. 3 Coleman, NE cor. NW NW, Section 27-16-12, the sand depth being 2,542-48 feet. The Oklahoma Natural Gas Co.'s No. 5 Tiger, CWL SW SW, Section 24-16-12, was making 800 bbls. natural from the sand at 2,242-45 feet. The Sheridan Oil Co.'s No. 1 Vore, SW cor. Section 34-16-12, was dry and abandoned at 2,665 feet. It was an old gas well.

Creek County

In Creek County, the Lima Oil & Gas Co.'s No. 1 Green, SE cor. NE NE, Section 24-17-8, was good for 19,000,000 feet of gas from sand at 2,720-23 feet. H. C. Wilson's No. 1 Williams, NE cor. SE, Section 21-16-8, had 1,000 feet of oil and 1,500 feet of water in the hole from sand at 3,174-80 feet and was estimated as good for 35 bbls. It was having trouble with the pump. D. R. Mason's No. 2 Broadnax, CEL SE NW, Section 23-16-8, which was making 15,000,000 feet of gas, decreased to 3,000,000 feet and started spraying oil, making 330 bbls. the first day, 480 bbls. the second, and was holding that rate.

The Pure Oil Co.'s No. 1 Wright, SE cor. NW, Section 19-17-9, was a 17,000,000-foot gasser from a broken sand at 2,618-60 feet. The Amerada Petroleum Corp. was spudding its No. 1 McIntosh, NE cor. NW, Section 30-17-9. The Lorraine Petroleum Co. had a rig on the ground for No. 11 Deere, NW cor. SW NE, Section 23-16-8, and abandoned location for its No. 10 Deere, NW cor. SE NE, same section.

May Resume Drilling

In the Burbank extension, 11 wells formerly shut down were rigging up to drill ahead. They were: The Comar Oil Co.'s No. 3 Thompson CSL SW NE SW, Section 15-27-5, at 2,290 feet; No. 4 Thompson, CSL SE NW SW, same section, at 2,765 feet; and the same company's No. 5 Thompson, SW cor. NW SW, same section, at 2,350 feet; Danciger and others' No. 6 Thompson, CNL NW SE SW, Section 15-27-5, at 2,285 feet; their No. 8 Thompson, CNL NE SW SW, same section, at 1,520 feet; the Phillips Petroleum Co.'s No. 7, C NW SE NW, Section 23-27-5, at 1,478 feet; the Phillips Petroleum Co. and Skelly Oil Co.'s No. 9, CWL SW NW NE, Section 24-27-5, at 2,900 feet; the same company's No. 10, C SE NW NE, same section, at 2,895 feet; No. 11, C SW NE NE, same section, at the same depth; No. 12 CEL SE NE NE, same section, at 2,900 feet; and their No. 14, CNL NE NW NE, same section, at 2,895 feet.

The Phillips Petroleum Co.'s No. 10, C SE NW NW, Section 23-27-5, was drilling at 1,291 feet. The Mid-Kansas Oil & Gas Co. was spudding No. 4 Rhodes, CNL NE NW SE, Section 9-27-5, and was drilling at 1,130 feet in its No. 2 Rhodes, NW cor. SE, in the same section, after getting a hole full of water at 1,105 feet. The Sinclair Oil & Gas Co. was fishing for tools at 1,050 feet in its No. 2 Woods, NE cor. SW, Section 9-27-5.

The Prairie Oil & Gas Co. was drilling No. 1 Hobson, CEL NE SE NW, Section 9-27-5, at 1,310 feet, and No. 2 Hobson, SE cor. NW, same section, at 1,130 feet.

On the Phillips Petroleum Co.'s Taylor lease, in Section 9-27-5, No. 8, CWL NW SW NE, was drilling at 1,275 feet; No. 9, CWL SW NW NE, was drilling at 1,075 feet; No. 7, CEL SE NE NW, was drilling at 1,260 feet; and there was a rig up for No. 10, CSL SE SW NE, and tools were being moved in.

The Roxana Petroleum Corp. was building a rig for its No. 3 Pappan, CWL SW NE, Section 4-27-5, was drilling at 245 feet in its No. 2 Pappan, SE cor. NE, same section. The Texas Co. was drilling its No. 2 Munroe, NW cor. SW, Section 3-27-5, at 310 feet, and the Car-

(Continued on Page 95)

A WORLD SUCCESS!

Within approximately 9 months since its introduction, the GUIBERSON Swab has sprung into world-wide preference. In many territories, notably the Smackover and the Powell Fields, fully 90% of all swabbing in recent months has been done with the GUIBERSON Swab. In California users pronounce it the most successful swab of any used there. Write for fully descriptive literature.

THE GUIBERSON CORPORATION
Box 1106, Dallas, Texas
Tulsa Los Angeles Houston Newark, O.

186

GUIBERSON

BETTER BE SAFE THAN SORRY

Gulf Coast Oil Operations

By P. L. McGreal

Bad weather interfered with already curtailed operations in Coastal Pools, resulting in further decline in production. Humble Oil & Refining Co. completes good producer at Pierce Junction. Deep wells the order at Orange. Operations at Luling Field have slowed down greatly.

HOUSTON, Tex., Dec. 10.—Heavy rains in the Coast region of South Texas and south Louisiana and the interior sections, interfered with operations in the pools and fields resulting in a loss in the gross production as well as retarding the already meager amount of development work under way.

The gross daily average production for the week is placed at 94,148 bbls., against an estimate of 95,277 bbls. for last week, representing a loss of 1,129 bbls. per day. The gross includes the Coastal Pools, the light gravity Laredo and Somerset Fields and the shallow sands in Milam County as well as miscellaneous sections. Deducting the amount used for fuel in the fields at drilling wells, the actual runs to the pipe lines would approximate 79,350 bbls. The estimated gross for the Gulf Coast Pools alone is 87,528 bbls. compared with 88,782 bbls. last week. The estimate for the Luling Field is 8,800 bbls. per day.

The gross is divided among the districts as follows:

District—	Bbls.
Batson	1,178
Blue Ridge	675
Barber Hill	350
Dayton	65
Damon Mound	1,940
Edgerly	280
Goose Creek	13,405
Humble	5,445
Hull	18,300
Jennings	670
Markham	110
Orange	16,375
Pierce Junction	745
Spindletop	865
Saratoga	1,795
Sour Lake	4,960
Somerset and Piedras Pintas	2,810
Vinton	5,925
Welsh and Anse La Bute	75
West Columbia	14,420
Miscellaneous	3,660
Total	94,148

Late in the week the Humble Oil & Refining Co. finished No. 6 Fitzsimmons in the Pierce Junction Pool at 3,510 feet. It started flowing 2,000 bbls. of fluid, 50 per cent sediment and water, due, it is thought, to faulty casing. It is on the northeast side of the dome. The Texas Co. abandoned No. 1 Settegast, between Pierce Junction and Blue Ridge, at 1,512 feet and has made a location for No. 2 some 2,000 feet north.

In the Hull Pool, the Link Oil Co.'s No. 4 Rivere is showing oil at 3,500 feet, as is the Mecom Oil Co.'s No. 3 Mecom at 3,720 feet. The latter is an old well that has been deepened. The Republic Production Co.'s No 73 Dolbear is showing oil at 2,410 feet.

In the Goose Creek Pool, the Gulf Production Co.'s No. 6 Chapman-Bryan at the mouth of the creek near the bay is flowing 700 bbls. of fluid at 4,325 feet, 350 bbls. of which is oil.

At Damon Mound, the Humble Oil & Refining Co. is trying to cut off the water in No. 1 Smith, which was a small pumper. The Sinclair Oil & Gas Co. is arranging to drill a test on the Becker on the south side, in which they hope to penetrate the black heaving shale that underlies that side of the dome and in which it is thought nice wells can be made, once the shale can be prevented from heaving.

Orange Pool

Deep wells are the order of the day in the Orange Pool since the Sun Oil Co.'s No. 2 Brown came in at 4,560 feet, flowing 3,500 bbls. and extended the pool three-quarters of a mile to the southeast. The well is still holding up at 3,000 bbls., 8 per cent sediment and water. The Orange Petroleum Co.'s No. 4 Chesson is bailing at 3,280 feet and the Gulf Production Co.'s No. 4 Chesson at 3,570 feet. The Atlantic Oil Producing Co. is making another test in No. 2 Hager at 3,570 feet.

Among the deep holes in the pool is the Mutual Oil Co.'s No. 8 Chesson at 4,265 feet, the Humble Oil & Refining Co.'s No. 20-B Chesson, deepening at 4,000 feet and No. 18-B, deepening at 3,650 feet. The Supreme Oil Co.'s No. 1 Jackson is drilling deeper at 4,585 feet, located nearly 1 mile north of the Sun Oil Co.'s well. The Gulf Production Co.'s No. 6 Kishi-Lang on B acreage on the northwest side of the pool is drilling at 560 feet. It will be a deep hole. Same company's No. 13 Hager on the east side of Cow Bayou is drilling below 3,545 feet and No. 14 around 2,875 feet. Its No. 3 Pevito is deepening at 3,560 feet and No. 5 is rigging up. It is on the west side of Cow Bayou, opposite the Sun Oil Co.'s well. The Brownie Babbittee Oil Co. is offsetting the Sun Oil Co. with No. 1 Brown to the north. The Rycade Oil Co.'s No. 1-A State Land, on the banks of the bayou, is drilling deeper at 4,517 feet, with a derrick up for No 1-C State Land. Northeast of the pool the Sun Oil Co.'s No. 1 Kato is deepening at 3,578 feet and the American National Oil Co.'s No. 1 Winifree, 1 mile northeast of production, is idle at 3,680 feet, waiting on a drill stem.

At Big Creek, the semi pool in Fort Bend County, Rich and associates' No. 1 Ahlers, south of production, bailed sulphur water and some oil at 2,380 feet. The crew is pulling the screen to drill deeper. The Coastal Oil Co.'s No. 3 at Thompson, in that county, is drilling at 2,800 feet.

South Louisiana

In the Vinton Pool, The Texas Co. has a small pumper in No. 3 Vincent, at 2,200 feet. The Gulf Coast Oil Co.'s No. 5 Vincent will make a pumper. The Gulf Refining Co.'s No. 30 Star is bailing at 2,420 feet and showing salt water. Marrs McLean's No. 5 Gray is bailing at 3,480 feet.

The Edgerly Petroleum Co.'s No. 1 Vincent is at 2,122 feet and No. 1 Tillery below 3,100 feet. The Just Oil & Refining Co.'s No. 2 Lyons is drilling at 1,776 feet. The Vinton Petroleum Co.'s No. 11 Rescue-Harmony is rigging and The Texas Co.'s No. 23 Gray is drilling at 2,276 feet. In the Jennings Pool, The Texas Co.'s No. 26 Latrielle is bailing at 1,855 feet.

Luling Field

Operations in the Luling Field have slowed down considerably due to a combination of high water, slackened demand for the crude and failure to extend the limits of the field over to the southwest into Guadalupe County. The Yoakum-Shriner Oil Co. finished No. 1 McKean, flowing 800 bbls. by heads in the lime formation.

South of the field, Dunlap and others' No. 1 fee is drilling at 800 feet. The test on the Purcell land, 3 miles from Lockhart, is in lime rock at 1,800 feet. The United North & South Oil Co. has made a location in Guadalupe County, north of No. 1 Shanklin. The tests drilling south and east of Seguin are standing idle for the present waiting for the roads to dry to get in fuel.

Laredo Districts

Tank car shipments of crude from the Laredo districts total 470 during the month of November, against 553 during October, a decrease of 83 cars. The slackened demand for the product has resulted in a number of the wells being shut down and others pinched in, while wells have been drilled to the sands, casing set and then shut down.

The Schott Oil Co.'s No. 20 in the Schott district is rated at 125 bbls. initial at 1,670 feet and the Neuvo Oil Co.'s No. 1 at 75 bbls. at 1,700 feet. The Aztec Oil Co.'s No. 3 showed for 100 bbls. at 1,700 feet, but it is being drilled deeper to the light gravity sands at 1,940-2,000 feet. The Schott Oil Co. is also deepening No. 9 to this sand, as is Allworth Brothers' No. 1. McCandless & Hosem are rigging No. 1 Hammond.

Arrangements are being completed to deepen the Houston Oil Co.'s No. 3 Carwright, the big gasser in Live Oak County. The well is estimated at 40,000,000 feet, showing 1,100 pounds pressure. The Packers Oil Co.'s No. 1 Garber, 9 miles west of the gasser, is drilling at 800 feet. The Pennormill Oil Co. is rigging No. 1 Wade ranch, 5 miles south of the well. The Plateau Oil Co. has a location for No. 1 Collins in San Patricio County. The location is near where Townsley, Miller & Little drilled No. 1 Wade in Jim Wells County to 2,000 feet last year.

The Pioneer Oil & Gas Co. is starting No. 10 Ernst in the Somerset district and the Gas Ridge Oil & Gas Co.'s No. 4 Voges in Bexar County.

Wissenger and others abandoned No. 1 Latham in Milam County at 1,080 feet. Gutherie and others' No. 2 Timmerman is drilling at 455 feet and Fritz Fuchs' No. 1, three-quarters of a mile west of Rockdale, is below 700 feet. The Freddie Palmer Oil Co.'s No. 2 Sterisky, east of Cattail Creek, is below 400 feet. The Noack Oil Co.'s No. 3 Baldridge is around 465 feet and the Texas Development Co.'s No. 1 Phillips, north of Rockdale, is at 865 feet. The Texas Petroleum Co.'s No. 8 Batte is in the Austin chalk at 2,100 feet, located 7 miles north of Rockdale. Tutles and others' No. 1 Ashby, 4 miles north of Milano, is at 2,100 feet. The Beverly Oil Co.'s No. 1 Baur is at 623 feet. W. C. Jennings has started No. 1 Branch, 2 miles north of Rockdale. The Plunkett Oil Co.'s No. 2 Von Goten is at 1,100 feet. The Twin City Production Co.'s No. 1 near Bremond is at 2,860 feet.

Coastal Wildcats

In Brazoria County, the Quick Development Co.'s No. 1 Boggs is at 3,500 feet on the northeast side of Stratton Ridge. The Freeport Sulphur Co. is starting No. 11 Dannebaum there. That company has one well there pumping an average of 120 bbls. per day. At Hockley Dome in Harris County the Texas Exploration Co.'s No. 15 Warren is drilling at 1,735 feet. The America Oil Co. is setting casing at 3,000 feet in No. 1, near Hempstead, Waller County. Northern parties are drilling No. 2 at Outlaw Dome in Montgomery County, west of New Caney, at 1,600 feet. The Houston Oil Co.'s No. 1 Mayes in Chambers County is drilling below 1,300 feet.

In Jackson County, the Vanderbilt Oil Co.'s No. 1 Selinar is shut down at 1,450 feet. The Texas Co.'s No. 1 Pomykal, southwest of Brenham, is setting 8¼-inch casing at 1,400 feet. In Liberty County, the Quick Development Co.'s No. 2 Peeler is at 2,700 feet and the South Dayton Oil Co.'s No. 1 Reviere, south of Liberty, is showing oil with the bit in 8 feet of sand at 3,140 feet.

Over in East Texas, a test is drilling in Jasper County between the Neches and Angelina Rivers at 615 feet. Locations have been made on the Benfield and Pullen lands. In the shallow sand district in Angelina County, known as the Jennings Pool, Paggi Brothers Oil Co. has a derrick up for No. 2 Henderson. Pike and others' No. 1 Henderson is standing at 525 feet with oil in the hole. Jennings has a location for No. 3 Henderson. McDaniels and others' No. 1 Ashberry in Shelby County is drilling at 1,800 feet. The Southwestern Petroleum Co.'s No. 1, 2 miles north of Garrison, Rusk County, is below 1,925 feet. The Producers Oil Co., a joint deep test in the old Nacogdoches Field, is showing some gas at 1,740 feet.

News from Fields of Canada

By Victor Lauriston

CHATHAM, Ont., Dec. 10.—In the Okotoks Field, southwest of Calgary, Royalite Oil Co. No. 4, Section 7-20-2w-5 is reported to have developed further gas production with some light oil as a result of deeper drilling. About two months ago at 2,890 feet, this test developed a gas production estimated at 7,000,000 feet. This was cased off and the hole drilled deeper, to 3,150 feet or more, when further work was delayed by the tools being lost in the hole. The well was then shut in for the winter. Recently, when the valve was opened, it blew gas for about 10 minutes, followed by a stream of oil for a like period, indicating the well had drilled itself in at the lower horizon. The gas flow from this horizon is stated to be between 7,000,000 and 8,000,000 feet a day, with some oil. The oil is of high gravity, about 61 Baume, similar to production from the Royalite No. 1 (Dingman Discovery) well which started the Calgary boom in 1914. Like the Dingman well, No. 4 flows by heads. It is the largest gasser yet drilled in the Okotoks Field. The production will be used in the gasoline plant, the residual gas being delivered to the Canadian Western Natural Gas Co. for distribution to Calgary.

In southern Alberta, Dr. C. C. Coulter will leave shortly for the new prospective field east of Calgary and north of Many Island Lake, to locate tests for the Canadian Oil & Refining Co. Drilling equipment will be moved in during the winter, and actual drilling will be started on one or more locations by next spring.

Sweetgrass District

In Sweetgrass district, southern Alberta, the Corlett Syndicate of Calgary, representing British and Australian interests, has secured an option on the Lethbridge Oils, Ltd., interests, including the unfinished Baalim well on Section 12-1-15w-4, now shut down at 2,030 feet. The Corlett interests have also secured options on a number of other companies with unfinished tests in the Sweetgrass district, as a preliminary to merging these companies and reorganizing for further development. It is planned to finish the Baalim well, and to spend ap-

(Continued on Page 92)

CLARK
DRILLING ENGINES

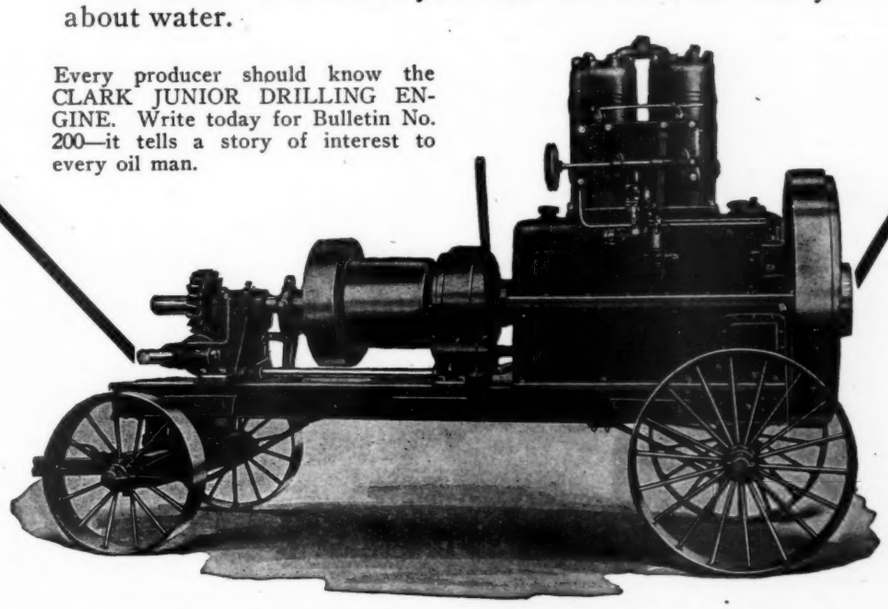
THE CLARK JUNIOR DRILLING ENGINE

PROVEN by long, practical drilling experience in actual field work, it stands today as the most successful and generally liked gas engine offered to the driller or producer. Light in weight—yet strong and durable—easily moved and set up—easily operated.

Will meet all conditions of cable tool drilling to a depth of 4,000 feet.

Exceedingly economical—especially as compared with the steam boiler. It will consume 5,000 cubic feet of gas for 24 hours—compared with 50,000 cubic feet of gas for the steam boiler—a clear saving of 90% on fuel. Consider also the water question—which is serious in many districts—with the CLARK you have no need for worry about water.

Every producer should know the CLARK JUNIOR DRILLING ENGINE. Write today for Bulletin No. 200—it tells a story of interest to every oil man.



CLARK BROTHERS COMPANY

Olean, New York

Manufacturers of Gas Compressors and Drilling Engines

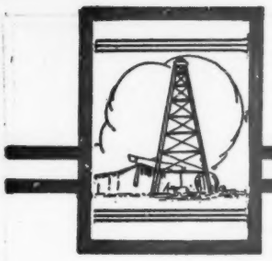
Sales Agents:

GAS ENGINEERING & CONSTRUCTION CO.

405 Kenndy Bldg.
Tulsa, Okla.

Union Bank Building
Pittsburgh, Pa.

208 Consolidated Royalty Bldg.
Casper, Wyoming



East Central Texas

By Staff Correspondent.

Production of Powell Field shows average daily decline of 71,031 bbls. during past week, the daily average being 124,780 bbls. Operators turning their attention to counties northeast of Powell Field where plans are made for extensive development. Kaufman County to get another big play.

CORSICANA, Tex., Dec. 10.—The daily average production of the Powell Field fell from 195,811 bbls. for the week ending December 1 to 124,780 the week ending December 8, a decline of 71,031 bbls. The number of completions during the week was up to the usual Powell standard but they were, as a rule, small wells when compared to the size of the initial producers of past days, and the falling off in the production of the wells already in was so great that the new wells could only lessen the decline.

The production by days was as follows: Sunday, 135,075 bbls.; Monday, 125,400 bbls.; Tuesday, 129,150 bbls.; Wednesday, 123,395 bbls.; Thursday, 122,025 bbls.; Friday, 120,018 bbls.; Saturday 118,400 bbls.

Interest in Powell is now overshadowed by the projected work to be done northeast of it in the counties of Navarro, Henderson, Kaufman and Hunt, where companies operating in the Powell Field will next make their wildcat play. With the experience acquired in the Mexia and Powell development, operators are in a position to select more likely locations on which to do their exploration work than in the pioneer days. Kaufman County was once considered the most favorable field for the wildcatter of any of the undeveloped counties in East Texas, but a host of deep dry holes were drilled there following the opening of the Mexia Field. All this work, however, serves a purpose. It indicates the places which it will be well to avoid and in a negative way points to acreage now believed to be on the right side of the Balcones fault to be the depository of oil. The work to be done spells danger to the general oil industry, as another Powell—which is not at all improbable—would delay the day when production and consumption will approach one another sufficiently close to warrant a generally better price scale for oil and its products. Until the possibilities of all the good looking territory along the fault have been exhausted, East Central Texas will continue to cut an important figure in the general situation.

The close proximity of the pipe line systems of the big companies which run their oil to the Gulf Coast and the cheapness with which the same companies can transport oil to the eastern markets by tank ships will make any big field in East Central Texas a continued menace to Oklahoma and Kansas and an active competitor of California.

Another important feature of such a field or fields is that development can be as rapid as the companies see fit. Wells can be completed in three weeks' time, and between now and next May it would be possible to add as many producing wells as were completed in Powell in the past seven and a half months and to add 25,000,000 to 30,000,000 bbls. to the oil already above ground—providing, of course, that the oil exists and the exploration work results in its discovery. On the other hand, oil has been an elusive quantity along the Balcones fault, and it may take a year's work to find whatever pools there may be yet undiscovered. The element of luck will enter largely into the coming wildcatting campaign.

The Tidal Buttram Oil Co. has received an offer of a premium over the market price of $1 per bbl. for 150,000 bbls. of Powell crude. The Tidal Buttram Oil Co. has one of the very successful operators in the Powell Field. Its Phillips lease produced 1,000,000 bbls. the first 50 days. The Ramsey lease up to December 1 produced 1,300,000 bbls., or 33,000 bbls to the acre, and its Crews lease produced 729,000 bbls., or 29,000 bbls. to the acre. The company operates three tank farms and is running practically all its crude to storage. Its production has dwindled to comparative insignificance since the field took a general slump, but if it never produced another barrel it would be a big winner.

A Victim of Circumstances

The case of Garland Kent, who operated a 40-acre lease on the Fleming farm, on the Harris survey, illustrates the uncertainties of the producing end of the oil business. Here was a man with a rich property who could not fully cash in on his potential wealth and had to stand by and watch his neighbors drain his acreage. When his first well came in Kent looked like a big winner. It was a great producer, starting at 6,000 bbls. Realizing that he had a very valuable property, he started 19 more wells on it, 2 wells to the acre. When the first of this batch of operations were ready to be drilled in it was at a time when oil was a drug on the market. The field was producing more crude than the pipe line companies could handle. Most of the big operators were running their own oil and only the Magnolia and the Cobden Fuel Co. were active buyers and they were temporarily burdened with oil. Kent, not being abole to find a buyer if he did drill in, had to wait. Meanwhile those around him were comp'eting their wells and taking care of their own production.

When production began to fall and there was a scramble for oil on the part of the pipe lines, Kent drilled in some of his wells, but instead of wells of 5,000, 8,000 or 10,000 barrels, he got one 5,000-bbl. initial producer, six that started at an average of about 375 bbls. and one 1,100-bbl. well and he had, at last report, 10 wells still classified as drilling, the fate of which is uncertain. The Atlantic Oil Producing Co., The Texas Co., the Tidal Buttram Oil Co., and the Gulf Production Co., with adjoining leases, are believed to have profited more or less from the inability of Kent to market the potential production of his rich 40 acres. The Texas Co., offsetting him on the east, got 60,000 bbls. initial production from 10 wells on the Fleming farm. The Tidal Buttram Oil Co., on the Phillips lease, south of Kent's lease, had 64,200 bbls. initial production from 11 wells. The Atlantic Oil Production Co., on the west, had 67,500 bbls. from seven wells. Kent's 10 wells on the Fleming farm yielded only 18,950 bbls. initial production.

	No. Wells	Initial Prod.	Dec. 2	Nov. 25
Humble Oil & Ref. Co.:				
Blumrosen ...	3	16,500	247	370
Brown	6	9,280	932	1,370
Cerf A	6	24,200	1,354	2,716
Cerf B	2	5,500	1,593	1,350
Crews	9	35,400	2,022	8,583
Davis	16	56,600	3,701	9,920
Fleming A ...	7	36,687	7,585	8,545
Fleming B ...	2	7,300	185	325
Gentry A	10	24,850	1,665	4,160
Gentry B	3	9,000	488	430
Humphreys ...	21	50,200	12,340	18,085
Irvine A	5	24,700	305	345
Irvine C	10	35,400	....	815
G. Kent	12	45,700	2,420	1,940
R. I. Kent....	1	2,000	31	90
E. L. Kent ..	3	2,100	256	1,725
W. J. McKie A	5	9,400	145	156
W. J. McKie B	10	14,100	1,866	1,406
Murchison ...	3	4,150	140	945
Ramsey A ...	9	22,200	1,292	2,866
Ramsey B ...	12	35,100	4,255	5,066
Walker	7	11,500	1,000	2,474
Total 162		471,867	43,822	73,682
Tidal Oil Co. and Buttram Pet. Corp.:				
Bressie	1	5,600	4,388	....
Crews	7	67,000	240	2,995
Phillips	11	64,200	950	3,180
Ramsey A ...	8	53,000	2,670	3,677
Ramsey B ...	7	28,900	675	857
Thompson	4	4,400	25	52
Total 38		223,100	8,948	10,761
Gulf Prod. Co.:				
Barron	5	17,800	882	842
Bush	2	1,200	1,315	1,050
Blumrosen ...	3	4,900	200	180
Christian	6	15,400	285	387
Crews	14	82,900	7,481	18,409
Gentry	7	22,200	809	652
Murchison ...	8	21,100	2,130	2,730
McKie	1	400	190	193
Smith	5	22,650	313	215
Witherspoon .	8	24,700	188	160
Total 59		213,250	13,793	24,818
Humphreys Oil Co.:				
Fair	1	1,250	25	25
Kent	7	7,500	300	420
R. I. Kent ...	3	12,240	43	110
Burke	1	300	....	100
McKie	62	221,400	10,275	14,855
Kenner	2	600	10	10
Springfield ...	2	1,700	140	95
Total 78		244,990	10,793	15,615
U. S. Tex. Oil Co.:				
Burke	4	6,200	350	392
Ramsey	4	6,800	60	68
Total 8		13,060	410	460
Skelly Oil Co.:				
Gentry	2	500	30	20
Ramsey	3	5,100	165	261
Keith	3	13,800	700	11,157
Total 8		19,400	895	11,438
Kirby Pet. Co.:				
Fleming	1	12,000	1,150	2,193
Brown	6	6,500	250	598
McKie	3	5,800	375	2,744
Total 10		24,300	1,775	5,535
McMan Oil Co.:				
Chapman	10	31,750	1,145	1,775
Chapman	5	5,000	340	768
Total 15		36,750	1,485	2,543
Roxana Pet. Corp.:				
Blumrosen ...	4	4,500	95	106
McKie	8	20,200	400	501
McKie A	8	17,530	4,088	4,181
Total 20		42,230	4,583	4,788
E. L. Smith Oil Co.:				
Keith	8	37,800	6,320	17,968
Ramsey	4	22,300	200	500
Total 12		60,100	6,520	
The Texas Co.:				
Fleming	11	65,000	3,657	10,417
McKie	3	8,600	465	343
The Texas Co.-Magnolia Pet. Co.:				
Kent	15	52,750	1,660	1,888
Total 34		126,350	5,782	12,648
Atlantic Oil Prod. Co.:				
Irvine	13	40,200	1,768	1,757
Kellum	7	67,500	9,595	14,578
Total 20		107,700	11,363	16,335
Simma Oil Co.:				
Boyd	2	8,500	5,775	7,678
Blumrosen ...	2	765	312	330
Rose	2	12,400	4,775	2,600
Total 6		21,665	10,862	10,608
R. E. Brooks:				
Cerf	3	14,560	1,450	3,616
Hughes Oil Co.:				
McKie	1	75	10	10
Empire Gas & Fuel Co.:				
Sweatman	1	1,750	75	....
Garland Kent:				
Fleming Kent	10	18,950	1,350	3,312
Mitchell & Jones:				
Burke	2	10,600	480	460
Hughes Dev. Co.:				
McKie	13	29,400	740	678
New Domain Oil Co.:				
R. F. Kent ...	5	2,300	308	218
Sun Oil Co.:				
Kent	4	11,700	495	497
Witherspoon Oil Co.:				
Burke	9	20,100	2,211	2,379
Mutual Oil Co.:				
Howell	3	21,800	4,055	5,740
Collins & Wheelock:				
G. Kent	2	950	126	....
Elliott and others:				
Hill	1	2,500	915	977
Parker and others:				
Cerf	1	2,000	....	700
Texas & Brazos Valley R. R. Co.:				
Right of Way.	2	17,500	....	5,302
Barclay & Meadows:				
Cerf	1	2,400	800	1,400
Bass et al:				
Irvine	3	600	200	....
Yoder et al:				
Harvard	1	2,400	....	....
Miscellaneous Cos.:				
Springfield and Christian ...	10	7,000	830	840
Grand total.	542	1,779,887	135,075	233,143

No Drilling in Mexia

There isn't a thing doing in the Mexia Field in the way of drilling. The Humphreys Oil Co. completed a batch of wells there, but did not start anything new. Its No. 8 Anderson made a 10-bbl. well at 3,189-96 feet; No. 39 Berthelsen, 10 bbls. at 3,063-70 feet; No. 38 Berthelsen, 25 bbls. at 3,005-70 feet; No. 6 Hayter, 10 bbls. at 3,147-49 feet; No. 1-A Kendrick, drilled to 4,598 feet and plugged back, 15 bbls. at 3,053-60 feet; No. 14 Kendrick, abandoned at 1,400 feet; No. 22 Thomas, 75 bbls. at 2,965-3,030 feet; No. 23 Thomas, 100 bbls. at 2,970-3,027 feet; No. 24 Thomas, abandoned location. The Simms Oil Co. abandoned the location for No. 16 Reid. J. F. Smith abandoned No. 1 Arnott as dry at 3,256 feet. The only operation left is Yoder and others' No. 1 Priddy, shut down at 3,204 feet.

Wildcat Dry Holes

In the wildcat districts in Limestone County a number of tests that have long been carried as "shut down" have been definitely abandoned. These were Grogan and others' No. 1 Jordan, dry at 3,075 feet; Mexia Red Seal Co.'s No. 1 Cook, A. Varela survey, dry at 3,065 feet; Yoder and others' No. 1 Oliver, Sullivan survey, dry at 3,100 feet; The Texas Co.'s No. 3 Strand, A. Varela survey, dry at 3,188 feet; Humphreys Oil Co.'s No. 2 Welch, Varela survey, dry at 4,420 feet; Humphreys Oil Co.'s No. 1 Brown, Jackson survey, drilled to 4,475 feet, plugged back to 2,873 feet where there is a 1,500,000-foot gas production; Iron Clad Oil Co.'s No. 1 Gill, Lauderdale survey, dry at 3,234 feet; Perrian Trustee's No. 2 Bounds, Minor survey, dry at 3,026 feet.

Completions in Currie

In the Currie district, Navarro County, Snowden & McSweeney's No. 9 Longbotham, Currie survey, was completed at 2,924-45 feet and made a 125-bbl. well. The Sun Oil Co.'s No. 1 Nash, Hillhouse survey, was abandoned at 3,480 feet; The Texas Co.'s No. 1 Morrow, Currie survey, abandoned at 3,150 feet; Newblock Oil Co.'s No. 1 Bounds, Smith survey, abandoned at 2,940 feet; Cosden Oil & Gas Co.'s No. 2 J. V. Bounds, Hillhouse survey, abandoned at 3,362 feet; Hughes Development Co.'s No. 3 J. M. Morrow, abandoned at 3,205 feet.

Late Completions

Late completions in the Powell Field were as follows:

R. E. Brooks, Jr., No. 7 Cerf, Smith survey, sand at 2,880-2,973 feet, 75 bbls.

R. E. Brooks, Jr., No. 6 Cerf, Smith survey, sand at 2,883-2,990 feet, 60 bbls.

Gulf Production Co.'s No. 7 Barron, Harris survey, sand at 2,963-79 feet, 105 bbls. on the pump.

Gulf Production Co.'s No. 6 Barron, Harris survey, sand at 2,982-84 feet, 100 bbls. on the pump.

Gulf Production Co.'s No. 2 Boyd, Meador survey, derrick abandoned.

Gulf Production Co.'s No. 1 Boyd, Meador survey, sand at 2,985,88 feet, show of oil, abandoned.

Gulf Production Co.'s No. 15 Crews, Harris survey, sand at 2,925-74 feet, 205 bbls. on the swab.

Gulf Production Co.'s No. 14 Crews, Harris survey, sand at 2,914-75 feet, 400 bbls. on the swab.

Humble Oil & Refining Co.'s No. 3-B

(Continued on Page 96)

Oil Production is a Most Uncertain Business

Safeguard what you have worked hard to get. One defective valve may tie up production for hours. It means more than the cost of repairs or a new valve—it means idleness of those dependent on the supply from that line—all overhead and no production until repairs are made.

Darling Parallel Seat Gate Valves are famous in oil and gas fields for their simplicity, their long wearing qualities, ease of operation. While users will tell you they seldom need to touch a Darling Valve it is worth while to know that they are most easily repaired in the field.

Our catalog and diagrams show you why. Write for one.

DARLING VALVE & MANUFACTURING CO.
WILLIAMSPORT, PENNA.

New York | Chicago | Oklahoma City | Houston

DARLING
GATE VALVES

North-Central Texas Field

By Dan F. Dugan

Wilson Farm Oil Co.'s No. 1 F. Wilson, Archer County, semi-completed, doing between 950 and 1,000 bbls. D. O. Johnson's No. 1 Wilson, Geraldine Townsite Pool, makes 600 bbls. First shallow sand in Eastland County at 480 feet. Gulf Production has two 250-bbl. wells in Hirschi Pool.

FORT WORTH, Tex., Dec. 10.—There is a more optimistic feeling in the North Central Texas Field right now than since early last summer, due to the discontinuance of the "prorating of runs," and the acceptance of connections to run the flush flow from completed wells. There are rumors that some of the smaller refineries in the Wichita Falls district that have no production are offering premiums for "spot oil" available to pipe lines that connect with their plants.

Production runs for the week for the entire field exceed the previous week by 1,745 bbls. daily, with a total production of 117,220 bbls. daily. All the pools, excepting Eastland County, which reported a loss of 745 bbls. daily, made small increases.

In the wildcat territories the reported sale of the holdings in Mitchell County of the Underwriters Producing & Refining Co. to the California Oil Co. is announced from Colorado City. The property consists of wells with a production of around 100 bbls. each, some drilling tests and several hundred acres of leases, the majority close to production. It is rumored around $500,000 was involved.

Mitchell County is at present credited with a production of 1,025 bbls. Operators and lease owners, however, estimate the actual production at 1,100 to 1,200 bbls., declaring a sufficient amount of crude is being used under the boilers of drilling tests in this and nearby counties to account for the difference.

The latest completions reported from the county were the Underwriters Co.'s No. 5-E Morrison, a 150-bbl. pumper at 3,110 feet, and No. 1 O'Neil of S. A. Sloan and others, a 150-bbl. pumper at 3,105 feet.

Eastland County

A development of interest was the finding of a shallow sand in Rosenfield and others' No. 1 Gilbert, 3 miles east of Carbon and 10 miles south of Eastland. The sand was found at a depth of 480 feet and the well produced 25 bbls. in the first 24 hours after the sand was penetrated. It is also producing a small amount of gas, but will probably have to be put on the pump. This is the first time that a producing sand has been found at that depth in Eastland County. Should it hold up to its initial production it will mean immediate activity in that part of the field. The drillers are reducing the hole, and it will be given a thorough test. Should this producer develop a real shallow field in that vicinity it might rival the Moran shallow pool. Operators over the entire section are attracted by inexpensive shallow production.

The Panhandle Oil & Refining Co. nearly completed another shallow well 8 miles southeast of Eastland this week, No. 6 Gray-Hightower, making 40 bbls. a day. Top of the sand was hit at 1,198 feet and it was drilled 14 feet into the pay.

This shallow field was opened up last winter and spring by No. 2 Gray-Hightower of the Panhandle Co., the best shallow well drilled in Eastland County during the year. It was completed eight months ago. It had a flush production of 400 bbls. a day and is now making 270 bbls. a day. The average production has been 300 bbls. and it has made in round figures 70,000 bbls. of oil since it was completed.

In the Cross Plains territory some important developments are reported from that town, 2 miles west of the Moore and others' No. 2 Ackers discovery well. Three tests showing gas production are reported. F. W. Stone & Co.'s No. 1 Barr, near the city limits of Cross Plains, found a sand at 1,423 feet producing close to 3,000,000 feet of dry gas from the top of the pay and has since drilled itself in until the flow amounts to more than 4,000,000 feet. The T. B. Slick No. 1 Faulkner, 700 feet northwest of Moore's No. 2 Acker and almost 2 miles from the Stone well, suddenly drilled into apparently the same sand at 1,400 feet, with a gas flow estimated at 2,000,000 feet.

The thickness of the sand in the Stone No. 1 Barr is unknown, as only the top has been touched, but in the Slick well drilling was continued and 18 feet of sand was drilled and so far no trace of water has been found, though the well is reported drilling 150 feet below this sand the middle of the week.

Schaffner Bros.' No. 1 James, a half mile southwest of the Slick test, is showing estimated 5,000,000 feet of gas at 1,652 feet, proving conclusively that a 1,600-foot sand also underlies this section, an entirely different sand to the 1,400-foot discovery.

Young County

B. F. Weekley's No. 3 McLaren has found the pay at 2,340 feet. It offsets the Union Oil Co. and the Hemphill producers in the Herron City district and is making 3,000,000 feet of gas and 15 bbls. of oil from the top of the sand. Operators estimate the well good for 200 bbls. when drilled in. Weekley found the sand 40 feet higher in this well than in any of the offsets.

Hirschi Completions

The week has been one of the quietest in this sector in many months. One fairly good producer was completed in the Hirschi district, the Gulf Production Co.'s No. 13 Dale credited with showing 250 bbls. at 1,870 feet. The McDabb Oil Co.'s No. 3 Saunders is a 75-bbl. completion at 1,845 feet. The Gulf Production Co. has entered the old Clara Pool territory, and is erecting a derrick on the Saunders estate west of the John O'Neil lease.

On the Kennedy lease in the Sunshine Hill district, Baldwin Brothers set casing and will test out a sand at 1,414 feet in No. 12, which is showing considerable oil. Further east Kemp and Ferris are rigging up No. 7 Eads.

A late field report from Wichita Falls credits the Gulf Production Co.'s No. 14 Dale as flowing and swabbing 250 bbls. from the 1,844-foot pay.

Archer County

A review of activities in Archer County shows the near completion of a 800-bbl. initial producer, several completions of more than average production, an increase in the number of drilling wells and the selection of a number of locations for drilling tests.

Of more than passing interest was the semi-completion early in the week of the Wilson Farm Oil Co.'s (Maer and Staniforth) No. 1-F Wilson for 800 bbls., which has increased between 950 and 1,000 bbls. daily, and goes on record as one of the best completions made in the Archer County Field during the past six months. The well is a short distance northeast of the Jetter-Brannen and McGregor discovery wells and the R. M. F. producer. The top of the pay was picked up at 1,594 feet.

Another near completion on the Geraldine Townsite Pool is the D. O. Johnson No. 1 Wilson, lot 315, with a daily flow of between 600 and 700 bbls. This is an offset to the west of the Jetter-Brannon-McGregor producer. It encountered the top of the pay at 1,594 feet and was penetrated 4 feet when the well started to flow by heads and later poured a steady stream of oil high in the derrick. The two 250-bbl. tanks were connected and quickly filled, and after between 250 and 300 bbls. had been run through The Texas Co.'s pipe line, the well was shut in to await additional storage from Wichita Falls.

Changes of Ownership

With an increasing demand for crude which has been apparent for the past week, a number of changes of ownership in many producing leases have been reported. The largest deal was the purchase of the Mid-Tex Co. from A. P. Minchew of part of his holdings in the Wilmot and Wilson lands for a consideration reported at $150,000.

The Carter Oil Co. sold to the Texhoma Oil & Refining Co. its holdings in the Mrs. Carter tract, block 93, American Tribune New Colony lands, consisting of 20 acres in the south part of lot 4, with six producing and one drilling well, for a consideration of $190,000.

Completions reported in the Burkburnett and Hirschi Pools are the Coleman Drilling Co.'s No. 1 Hewitt, dry at 1,400 feet; Gulf Production Co.'s No. 13 Dale, 250 bbls. at 1,870 feet; McDabb Oil Co.'s No. 2 Potter, 30 bbls. after a shot a 1,865 feet; same company's No. 3 Saunders, 75 bbls. at 1,850 feet; Magnolia Petroleum Co.'s No. 92 Reilly, 20 bbls. at 530 feet; Robinson Oil Co.'s No. 6 Roller, 15 bbls. at 1,160 feet.

Drilling Operations

Drilling—Brown and others' No. 2 Burnett, drilling at 400 feet; Powell and others' No. 1 Van Horn, drilling in blue shale at 1,810 feet; Kemp and others' No. 6 Eads, drilling in rock at 215 feet; Langford and others' No. 8 Langford, drilled to 1,875 feet and shut down, will plug back and shoot a sand showing some oil at 1,810 feet; Lewis and others' No. 2 George, changing to cable tools at 2,575 feet; Morgan and others' No. 1 Chapman, drilling at 1,845 feet without any showing; McDabb Oil Co.'s No. 2-A Saunders, drilling at 305 feet; Magnolia Petroleum Co.'s No. 22 Holtzen, drilling at 790 feet; No. 7 Holtzen, running 5⅞-inch liner at 1,800 feet; Northwestern Oil Co.'s No. 1 Eads, pumping water and mud at 1,470 feet; John O'Neil's No. 3 Saunders, swabbed 150 bbls. in nine hours from a sand at 1,945 feet; No. 4 Saunders, swabbed 150 bbls in 19 hours at 1,870 feet; Perkins and others' No. 1 Saunders, flowing 175 bbls., will be put on the pump this week at 1,865 feet; No. 2 Saunders, standardizing on top of an oil sand at 1,830 feet; Pigg Oil Co.'s No. 17 Hirschi, showing for a 225-bbl. producer from a sand at 1,875 feet; No. 18 Hirschi, drilling in brown shale at 1,125 feet; Sun Oil Co.'s No. 24 Hirschi, drilling in an oil sand at 1,855 feet.

Wichita County-Electra

Completions—Magnolia Petroleum Co.'s No. 6 Douglas, 6 bbls. at 1,030 feet; same company's No. 1 Pere Waggoner, 20 bbls. at 1,615 feet; Simms Oil Co.'s No. 13 Burnett, 80 bbls. at 1,540 feet.

Drilling—Buffalo Texas Oil Co.'s No. 4-B Douglas, drilling in soft rock at 485 feet; Kruger and others' No. 7 Waggoner, pulling casing and will drill deeper at 1,595 feet; Memphis Petroleum Co.'s No. 3 Hoanaker, set 6⅝-inch casing on top of a sand showing oil at 863 feet; Rowe Drilling Co.'s No. 1 Waggoner, pulling casing and will drill deeper at 1,665 feet; Texhoma Oil & Refining Co.'s No. 1-J Waggoner, shut down for orders without any showing at 2,020 feet; Bass and others' No. 6 Waggoner, drilling at 595 feet; Empire Gas & Fuel Co.'s No. 26 Burnett, shut down for orders on top of a sand at 1,628 feet; Four States Oil Co.'s No. 7 Jennings, drilling at 855 feet; Fisher and others' No. 3-B Fisher, drilling at 1,685 feet; Hartford Trust Co.'s No. 6 Burnett, trying to land 10-inch casing at 700 feet; Houston Oil Co.'s No. 14 Waggoner, drilling at 530 feet; Magnolia Petroleum Co.'s No. 31 Waggoner, drilling at 380 feet; No. 5-B Waggoner, at 1,615 feet; No. 1-A Burnett, at 1,995 feet; Noel and others' No. 1 Waggoner, shut down for 5⅞-inch casing with the tools still in the hole at 1,950 feet; Panhandle Refining Co.'s No. 1 Marshall, drilling at 1,365 feet; Perkins and others' No. 10 Burnett, at 1,000 feet; No. 1 Burnett will probably be abandoned at 1,864 feet; Texhoma Oil & Refining Co.'s No. 27-A Waggoner, swabbed 134 bbls. in 24 hours from a sand at 1,900 feet; Carter and others' No. 2 K. & K., indications of making a splendid producer at 1,800 feet, it swabbed 200 bbls. in 18 hours; Comac Drilling Co.'s No. 1 Terhune, drilling at 400 feet; Kentucky Oil Corp.'s No. 1 Davis, showing some oil and drilling at 1,565 feet; Parker Bros.' No. 1 Love, drilling at 505 feet; Chappell and others' No. 1 Jackson, at 1,530 feet.

Wilbarger County

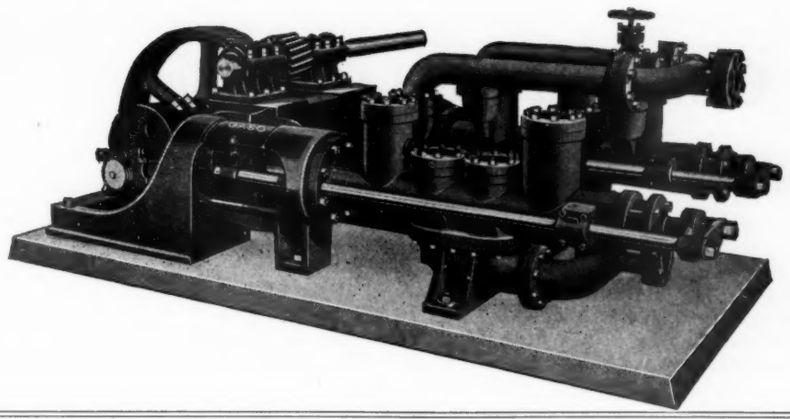
Drilling — Adams and others' No. 1 Waggoner, rigging up to drill in an old hole at 735 feet; Robinson and others' No. 1 McCaleb, running 6⅝-inch casing with a new shoe at 2,105 feet; Knight and others' No. 1 Potts, drilling at 1,805 feet; Noble Oil Co.'s No. 1 Waggoner, drilling at 980 feet; South Vernon Oil Co.'s No. 1 Stephens, will start drilling soon from a depth of 1,575 feet.

Archer Completions

Completions—The Texas Co.'s No. 8 Carter Bros., 122 bbls. at 1,580 feet; Bell and others' No. 3 Wilson, 45 bbls. at 1,600 feet; Bohler and others' No. 2 Wilmot, 120 bbls. at 1,600 feet; Dale and others' No. 6 Wilmot, 140 bbls. at 1,600 feet; Granberry Drilling Co.'s No. 1 Wilson, 10 bbls. at 1,600 feet; Gwynn and others' No. 2 Carter, 100 bbls. at 1,580 feet; Jetter and others' No. 1 Wilson, 175 bbls. at 1,590 feet; Kouri and others' No. 1 Brown, dry at 1,555 feet; Sibley and others' No. 6 Wilmot, 75 bbls. at 1,590 feet; Staley and others' No. 4 Carter, 50 bbls. at 1,575 feet; Underwood Drilling Co.'s No. 2 Wilmot, 35 bbls. at 1,595 feet; White Oil Corp.'s No. 1 K. & K., 35 bbls. at 1,370 feet.

Drilling—Barkley and others' No. 2 Wilson, setting 6⅝-inch casing at 1,515 feet; sand at 1,522 feet showing considerable oil; Boyd and others' No. 1 Mrs. Carter, drilling in brown shale at 1,305 feet; Chenault and others' No. 6-B Wilson, bailing and testing an oil sand at 1,585 feet; No. 7-B Wilson, drilling at 1,520 feet; Clayton and others' No. 2 Richardson, cemented casing and will drill deeper at 1,362 feet; Cranfill and others' No. 1 Wilson, drilling at 1,500 feet; Dale and others' No. 7 Wilmot, drilling at 1,105 feet; Dilday and others' No. 1 Ferguson, drilling at 2,140 feet; Dixon and others' No. 1 White, bailing salt water and oil from a sand at 1,595 feet; Empire Gas & Fuel Co.'s No. 1-B

(Continued on Page 88)



Gaso Leadership Is Based on Experience *Plus Specialization*

The Gaso line of Oil-Field Pumps has been on the market for a little over six years.

In that time more than 8500 Gaso Pumps have been bought and placed in operation.

The largest companies in the business have become consistent customers. Standard Oil, Sinclair Pipe Line, Prairie Pipe Line and scores of others of like caliber have specified them.

These have bought, not simply because the pumps were Gaso Pumps, but because in their opinion they offered extraordinary pump efficiency.

Gaso Pumps are the product not only of experience—an experience stretching back years prior to the establishment of the company, when, as oil-field machinery repairers, the designers of Gaso Pumps were observing oil-field requirements at first hand—but also of **specialization.** It is but natural that a company devoting all its time, thought and effort to producing one family of pumps for the use of one industry, should be able to offer a product just a bit more advanced than that of concerns not so specializing.

8500 Gaso Pumps produced in the last six years—8500 reasons why you also will find them efficient and economical.

GASO PUMP & BURNER MFG. CO. TULSA, OKLA.

GASO PUMPS

for oil field uses

California Field Operations

By L. P. Stockman

Chanslor-Canfield bring in four wells at Torrance, three of about 1,000 bbls. each. Selby & Root's No. 2 makes 1,850 bbls.; Star Petroleum Co.'s No. 1 Parsons and Petroleum Midway's No. 1 Post Houts, 1,000 each. Petroleum Midway has four completions at Long Beach, No. 7 Harlow Kent, 3,600 Bbls.

LOS ANGELES, Cal., Dec. 8.—The amount of development work being done by the larger companies and the efforts made by them to sign up future production is probably the best criterion of the potentialities of the Torrance Field, and if their judgement is correct this field should show a substantial production during the coming year. The Chanslor-Canfield Midway Oil Co. and the Petroleum Midway Co. are doing most of the development work at present, but others are making plans for immediate action. The General Petroleum was the first company to lay a pipe line from the field but was followed soon by the Standard Oil Co. The Petroleum Midway, Pan American and Associated Oil Cos. have since laid lines and the Union Oil Co. is reported to be making preparations to do likewise. The Standard has been purchasing most of the crude offered for sale, although the Pan American has within the past few weeks run purchased oil through its lines. The Petroleum Securities Co., another Doheny concern, is selling its crude to the Pan American and it is reported the latter has secured contracts for delivery of oil from other wells nearing completion. The Union has a good deal of acreage under lease but it is apparently productive of only small wells, and if the company lays a line from the field it will probably be done to enable it to purchase crude.

May Surpass Huntington

This field, which is only in its infancy, is producing nearly half as much as Huntington Beach and it would not be surprising to see it pass the latter within the next five or six months. There are only 63 producing wells at Torrance while there are 216 pumping and flowing at Huntington. For the future, the 117 wells drilling at Torrance should be far more productive than the 58 drilling at Huntington Beach. The completion of four nice wells by the Chanslor-Canfield Midway Oil Co. during the week focused the attention of operators on this area and, while there were several other larger wells completed they were in more productive territory. The Chanslor-Canfield's four new wells were Nos. 13, 14, 15 and 18 on the company's Torrance lease. Number 18, finished at 3,730 feet, was good for 1,100 obls. a day, while No. 15, brought in from 3,715 feet, showed a maximum production of 1,010 bbls. The output from No. 18, which is clean, tests 24.6 degrees, while the production from No. 15 tests 25.1 degrees and shows a cut of 3 per cent. Number 13 was put on production after being finished at 3,724 feet and showed an output of 950 bbls., while No. 14 was finished at 3,726 feet and flowed at the rate of 685 bbls. daily. Number 13 Torrance is producing 26.1 gravity oil with a cut of one-half of 1 per cent, while the output from No. 14 tests 25.3 degrees and shows a cut of 1 per cent.

Probably the largest well brought in during the week was Selby & Root's well No. 2, which came in doing 1,850 bbls. a day of clean 25.8 gravity oil. It was finished at 3,840 feet and is flowing through a ¾-inch bean under a pressure of 625 pounds. The Shell Oil Co. completed its second well at Torrance by bringing in No. 1 Frenger during the latter part of the week. The Shell did not have as good success as most of the other companies recording completions, as No. 1 Frenger was good for only 182 bbls. a day of 22.3 gravity oil. This well was finished at 3,575 feet and resulted in a pumper. The Star Petroleum Co. was much more successful than the Shell, its No. 1 Parsons being brought in flowing 1,100 bbls. of 24.6 gravity oil a day. No. 1 Parsons was finished at 3,750 feet and is flowing through a ⅞-inch bean under a pressure of 435 pounds.

The Federal Drilling Co. was also successful in placing a good well on production and incidentally increased its total field production to a little over 1,800 bbls. a day. Number 1 Huyck, the Federal's new well, was brought in doing 850 bbls. a day from 3,742 feet. The oil, which tests 25.4 degrees and shows a cut of 3 per cent, is flowing through a ¾-inch bean under a pressure of 260 pounds. The Petroleum Midway Co., which has been slowly building up a substantial production at Torrance, added another thousand barrels a day during the week by bringing in No. 1 Post Houts. This new well was finished at 3,772 feet and is flowing a little less than 1,000 bbls. a day of 25.8 gravity oil. The oil is of much better grade than that from the company's previous completions. The company now has five producing wells, two producing oil lighter than 20 degrees, and the remaining three producing oil varying from 15 to 18 degrees. The company, as at Long Beach and Santa Fe Springs, is pursuing an intensive drilling program and its 10 drilling wells places it second only to the Chanslor-Canfield Midway Oil Co., the discoverer of the field.

Long Beach

The number of completions at Long Beach during the past few weeks has been unusually small, the comparatively small decline in production showing the older wells have held up very well. The Petroleum Midway (California Petroleum), with four new wells and one recompletion to its credit, carried off field honors during the week but was closely pressed by the Shell Oil Co. The Petroleum Midway Co.'s four new wells were No. 7 Harlow Kent, No. 2 McDavid, No. 1 O'Neill and well No. 3 on Foster lease No. 1. The largest of the company's quartet of new wells was No. 7 Harlow Kent, which came in flowing 3,600 bbls. a day of 26.9 gravity oil from 5,001 feet. The well is flowing through a ⅞-inch bean under a pressure of 700 pounds. No. 1 Neece, the company's second largest well, was a recompletion after being redrilled and deepened from 3,971 feet. It was finished at 4,788 feet and registered an initial production of 2,150 bbls. of 26.3 gravity oil. This well is also flowing through a ⅞-inch bean, the well gauge showing the pressure to be 480 pounds. The company completed a fair well during the early part of the week when No. 1 O'Neill was put on production and registered an initial output of 550 bbls. daily. This well was originally drilled to 4,412 feet but was later plugged back to 4,335 feet where a string of 6¼-inch casing was landed. The oil from No. 1 O'Neill, which is clean and tests 23.3 degrees, is flowing through a ½-inch bean under a pressure of 300 pounds. Well No. 3 on Foster lease No. 1 was good for only 475 bbls. a day from 3,900 feet, the oil testing 25.1 degrees and showing a cut of 1½ per cent. The Petroleum Midway's smallest completion was No. 2 McDavid, which made 200 bbls. of 21.6 gravity oil during the first 24 hours. This well shows 5,238 feet of hole and if the production was clean the company would probably have listed the well as a satisfactory completion. Because over 15 per cent of the production was sand and emulsion, the flow was killed and additional work will be required. The company has been experiencing difficulty in completing No. 1 Ella Clark at 4,375 feet and, because the well has been pumping nearly all water, there is a serious question as to the ultimate outcome. The Petroleum Midway's production at Long Beach is approximately 20,000 bbls. a day, which the company has been successful in maintaining for the past few months.

Shell's Completion

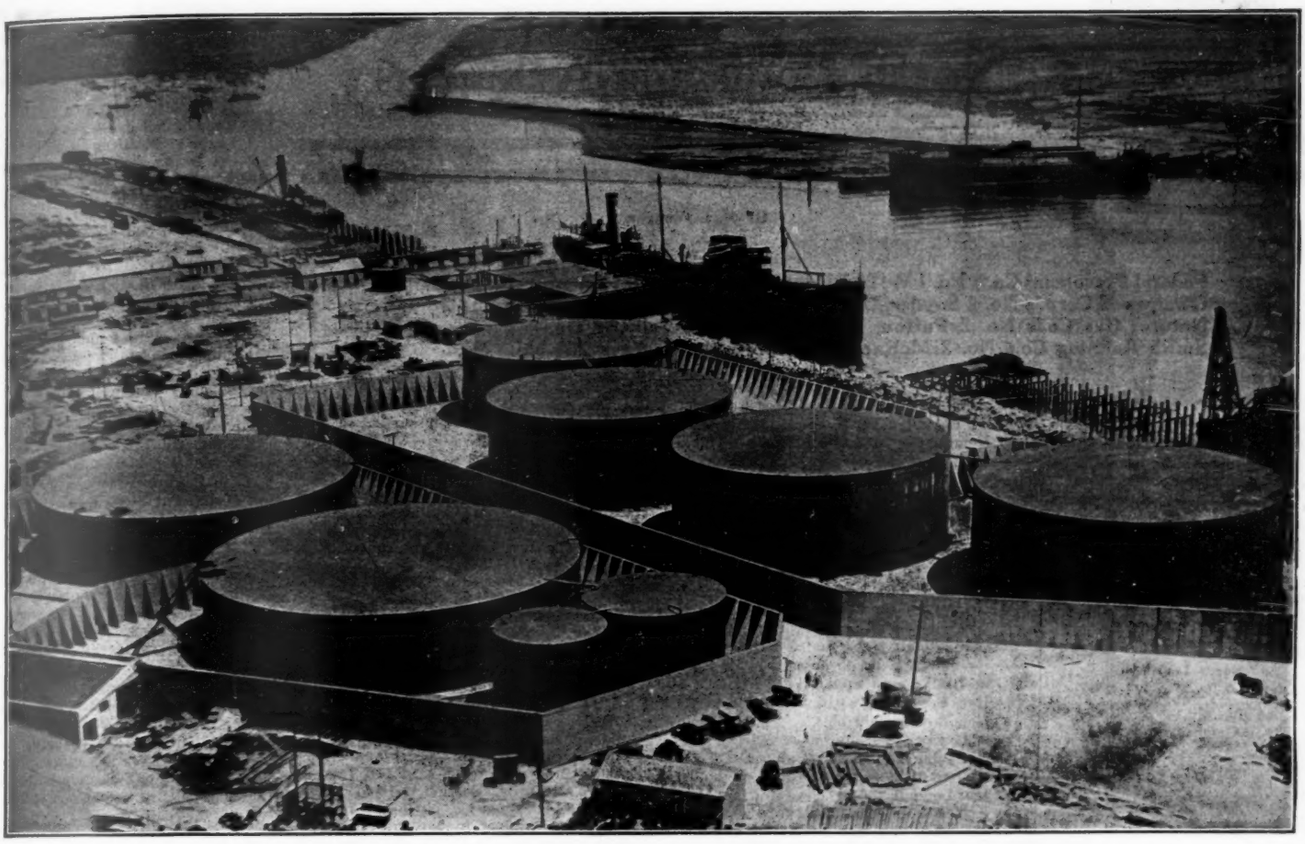
The Shell Oil Co. also completed several good wells during the week and added 6,200 bbls. of new production. The Shell's largest well was No. 3 Stakemiller, which was put on production at 5,050 feet and registered an initial output of 3,150 bbls. This well, on the south slope of Signal Hill, was completed with a 6¼-inch oil string landed at 5,047 feet. The oil from this new producer, which tests 27.9 degrees and shows a cut of 8 per cent, is flowing through a 1½-inch bean under a pressure of 750 pounds. The Shell's No. 6 Cresson was also a new well, the initial production, however, being slightly less than that of No. 3 Stakemiller. No. 6 Cresson was put on production after being drilled to 4,967 feet and showed an initial output of 2,600 bbls. The oil, which is flowing through a ¾-inch bean under a pressure of 550 pounds, tests 29.9 degrees and shows a cut of a little less than 1 per cent. In addition, the Shell finished another well after redrilling and deepening it. This recompletion was No. 1 A. Harriman-Jones, a former 4,000-bbl. producer, which has been returned to production after being off for several weeks. This well suddenly went to water some time ago and, while it is making 450 bbls. of fluid a day, about 20 per cent of it is emulsion. The quality of the oil is also unsatisfactory, a test showing it less than 20 degrees in gravity. The Crown City Oil Co., after several reverses, completed No. 1 A. Graham early in the week and put it on production doing 1,700 bbls. a day from 4,612 feet. It was completed with a 6¼-inch oil string landed on bottom and the production, which tests 23.4 degrees and shows a cut of a little over 1 per cent, is flowing through a ⅞-inch bean under a pressure of 300 pounds. This is the company's second completion in this field, although it was not successful in keeping its first well on production. The company's first well was completed early in the year and brought in producing from the upper sand at 3,610 feet. The hole was full of junk, however, and the company was not successful in returning it to production after it had sanded up shortly after its completion. After several attempts to clean the well it was finally abandoned and the latest completion, No. 1-A, was drilled to replace the hole lost. The present well, finished at 4,610 feet, was 1,000 feet deeper, but its production compensated for the extra hole. Dabney and Delaney's No. 1 Natzke, which was finished during the early part of the week at 4,500 feet, resulted in a 1,200-bbl. well. This, the company's first successful completion, is flowing through a ⅝-inch bean under a pressure of 150 pounds

(Continued on Page 92)

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Following is a list of tankers, date departed, destination, kind of cargo and amount in barrels:

Pennsylvania Sun, November 26, New York, crude	95,000
Gulfpoint, November 26, New York, crude	74,000
Delaware Sun, November 26, Philadelphia, crude	98,000
Solana, November 27, Fall River, crude	65,000
Deroche, November 27, New York, crude	74,000
Shreveport, November 29, Fall River, crude	70,000
Halo, November 29, Boston, crude	74,000
Robt. E. Hopkins, November 29, New York, crude	74,000
Vacuum, November 29, Philadelphia, crude	75,000
H. M. Flagler, November 29, New York, crude	87,000
Nora, November 30, New Orleans, crude	95,000
Agwistone, December 1, New York, crude	110,000
Imlay, December 1, New York, crude	71,000
Coastwise	
R. J. Hanna, November 26, Richmond, crude	79,000
Trimountain, November 27, Martinez, crude	65,000
Paul Shoup, November 27, Avon, crude	78,000
S. C. T. Dodd, November 27, Richmond, crude	80,000
La Parisima, November 27, Portland, refined	30,000
Los Alamos, November 28, Seattle, refined	25,000
Lubrico, November 28, Richmond, crude	79,000
Los Angeles, November 29, Oleum, crude	76,000
Liebre, November 30, Seattle, fuel	74,000
F. H. Hillman, November 30, Point Wells, refined	45,000
La Placentia, November 30, Martinez, crude	77,000
R. J. Hanna, November 30, Richmond, crude	78,000
W. S. Miller, November 30, Richmond, crude	74,000
S. C. T. Dodd, December 1, Richmond, crude	77,000
Montebello, December 1, Martinez, crude	75,000
Lubrico, December 2, Richmond, crude	79,000
Exports	
India Arrow, November 26, Shanghai, refined	85,000
H. T. Harper, November 27, Honolulu, refined	30,000
La Crescenta (Br.), December 1, Chile, fuel	60,000
From San Francisco	
W. S. Porter, November 26, Astoria, fuel	50,000
J. A. Moffett, November 28, Prince Rupert, fuel	62,000
Richmond, November 28, Willbridge, fuel	64,000
El Segundo, November 29, Point Wells, refined	32,000
Frank G. Drum, November 29, Linnton, fuel	74,000
Atlas, November 30, Astoria, refined	16,000
From Port San Luis	
Hoven, November 26, Seattle, fuel	73,000
Salina, November 27, Manila, fuel	80,000
Montebello, November 27, Martinez, crude	72,000
Oleum, November 29, Oleum, crude	34,000



With their six 80,000 bbl. storage tanks crowded close together on the Los Angeles waterfront, the Shell Oil Company of California and the Petroleum Midway Company, Ltd., faced a fire problem of unusual gravity. They could not afford to take chances.

—So they installed *Foamite* Protection

Conditions of extreme fire hazard have been brought about at Los Angeles through concentration of many ship-loading oil stations on the harbor. Risks which normally attend the storage of any highly inflammable liquid, even in isolated tanks, are here tremendously increased by close grouping.

Not only is oil property of great value under constant menace, but adjacent buildings, shipping, and in fact the whole harbor, are endangered.

Several of the leading oil operators recently recognized this situation and their public duty in appointing a committee of petroleum engineers to make full investigation and outline protective measures. Whatever their general recommendations, it is certain that foam protection specifically must play a principal part in safeguarding the threatened area.

To assure themselves and the public of adequate fire protection, two of the oil companies concerned, whose plants are pictured above, have called on Foamite-Childs for *Foamite* Protection. Their decision is supported by authentic records which show that the *Foamite* System has *never failed* when designed, installed, and maintained by Foamite-Childs engineers.

Foam protection is not new in theory; but its successful application demands a highly specialized knowledge, not only of oil—not merely of chemical reactions—but of *fire* in its variable manifestations. No two oil fires are precisely alike, and when home-made foam systems fail it is because they fall short in one or another unforeseen requirement. The *Foamite* System as installed by Foamite-Childs specialists always succeeds because it possesses the flexibility and power to meet every emergency.

Each oil plant presents its own individual fire problem demanding the expert application of foam protection standards. Why take chances? Why experiment? One tank of oil destroyed costs more than a *Foamite* System that safeguards a whole farm of tanks.

Our engineers will make recommendations and furnish rough estimates that place you under no obligation.

Foamite-Childs Corporation

Fire Protection Engineers and Manufacturers

725 Turner Street, Utica, N. Y.

Sales and Engineering Representatives in the leading cities of all countries

North Louisiana-Arkansas

By M. L. Vaughn

Federal Petroleum Co.'s No. 1 W. H. Murphy, Union County, 300-bbl. pumper; Owenwood Corp.'s No. 2 Snyder, Ouachita County, makes 400 bbls; Arkansas Natural Gas Co.'s No. 2 Patton, 250 bbls.; Burch Walker's No. 4 Patton, Smith Refining Co.s No. 2 McRae and White's No. 2 Watt, 200 bbls. each.

SHREVEPORT, La., Dec. 10.—Production, as indicated by average pipe line runs for the past week, shows no decided change. The heaviest losses were in Haynesville and Light Smackover runs, which were 475 and 830 respectively. Losses were also in evidence in Caddo, light and heavy, El Dorado and Calion areas, which gains in Bellevue and Stephens and the heavy Smackover were not sufficiently heavy to counter-balance with the result that an aggregate decrease in daily runs of 420 barrels is shown for the week. The distribution follows:

North Louisiana

Caddo, light	8,670
Caddo, heavy	2,330
De Soto-Red River	5,595
Elm Grove	1,060
Haynesville	23,100
Homer	9,165
Bellevue	6,785
Total	56,705

South Arkansas

El Dorado	11,385
Calion	7,555
Stephens	3,085
Smackover, light	16,900
Smackover, heavy	80,800
Total	119,725
Total both areas	176,430
Total last week	176,850
Decrease	420

Water Menaces Monroe

The State department of conservation is greatly concerned over the menace to the Monroe gas area through water encroachment and has issued a statement calling for suggestions from gas producers as to methods that may possibly be of service in combating the evil, especially as the department is contemplating issuance of general instructions covering the situation.

H. W. Bell, supervisor of the minerals division through whom the commission speaks, states, in part, as follows: "Water is so prevalent that some of the wells in this area must be produced wide open in order to get the 20 per cent of original open flow capacity against the line pressure.

"The area adjacent to Swartz is especially menaced by water. The closed pressure of wells has been greatly reduced in that area due largely to close spacing and water. It is evident that if all wells were closed in for weeks the pressure would run up considerably, but the low back pressure held on the gas rock and on the casing greatly increases the opportunity for water to get into the gas rock.

"No well should be drilled more than 50 feet below the top of the gas rock. All deep wells that make water should either be cemented up to the 50-foot mark or repaired for top water as the case would justify. Plugging up to that point would greatly help a well.

"It is very important that the water be entirely excluded where possible, because it is a great gas killer. When it is not possible to shut off the water it should not be kept down by frequent blowing through the casing as that greatly reduces the pressure and may draw in edge water or break in top water. Siphons should be used for that purpose. They can be operated intermittently or continuously and very little gas is wasted.

"Blowing should be done only to determine the condition of wells. The sudden relief of several hundred pounds pressure allows a rush through the gas rock and pockets off gas or puts great friction on its motion. There is also much danger of breaking in top water around weak spots in casing around the shoe."

Eleventh Producer

Late reports from the Ouachita County area of the Smackover Field indicate completion by the Smith Refining Co. of its eleventh producer without a failure in the Louann area. This is No. 2 McRae, Section 30-15-16, completed at 2,260 feet, flowing 200 bbls.

Through a compromise reached out of court the El Dorado Union Oil Co. has secured title to 30 acres of oil lands in the Louann sector close to the Burton gusher, the completion of which, last February, brought adjoining acreage to that involved in the compromise to as high as $10,000 an acre. This settlement followed a reversal by the supreme court of a demurrer in favor of the El Dorado Union Co. through which they attempted to compel Mrs. Jeanette Hughes to vacate a lease which she held and which was alleged to have been vitiated through failure to drill within the prescribed limits. The acreage is estimated to have had a value at one time of approximately $1,000,000.

Annual inspection of The Texas Co.'s properties in Ouachita, Morehouse, and Union Parishes, Louisiana, has been under way during the week by company officials. The party was headed by Amos L. Beaty, president; E. C. Lufkin, chairman of the executive committee; C. B. Ames, general counsel; Robert A. Johns, general attorney, D. J. Moran, manager of the production department, and Judge Hampden Story.

The regular monthly meeting of the Shreveport section of the Southwestern Geological Association held Friday, was addressed by Robert Wesley Brown, federal tax consultant, and writer on technical subjects connected with oil and mineral geology, who took for his subject: "Oil Land Valuation."

Smackover Completions

Three producers and one failure are recorded for the Union County area of the Smackover Field for the past week with a total aggregate production of only 450 bbls.

The Federal Petroleum Co. completed No. 1 W. H. Murphy, Section 22-16-5, at 2,060 feet, pumping 300 bbls.

The Gulf Refining Co. is pumping 120 bbls. from No. 4 T. C. Goodwin, Section 16-16-15, completed at 2,080 feet.

The Magnolia Petroleum Co. shot casing and abandoned No. 2 Meakin, Section 33-15-16, at 2,275 feet, account of salt water.

Weatherbee and others completed No. 1 Rice, Section 6-16-15, flowing 30 bbls. from 2,260 feet.

Drilling Operations

Operations in Union County area indicate a slight increase in activity, with 10 more wells drilling, but a decreased number of rigs and derricks this week.

The Arkansas Natural Gas Co. started drilling and set 10-inch surface casing in No. 6 Cullens, Section 4-19-15. Barnsdale & Foster started drilling No. 4 J. Murphy, Section 17-16-15, and set surface 12½-inch. Browder and others have drill stem stuck at 1,920 feet in No. 1 Burns, Section 17-16-15. Burton and others are arranging to set tubing with packer at 2,037 feet in No. 1 Smith, Section 19-15-16, with 1,500 feet of oil in hole and 58 feet of sand.

The Constantin Oil & Refining Co. is drilling in gumbo and boulders at 600 feet in No. B-3 Hinson, Section 7-18-15. Crawford & Sebastian are arranging to deepen No. 5 James, completed in May with 150 bbls. at 1,996 feet in Section 6-16-15. J. E. Crosby started drilling and set surface 12½-inch in No. 2 Harrell, Section 17-16-15. Estes and others are drilling in gumbo at 2,110 feet in No. 1 McGraw, Section 1-16-17. The Federal Petroleum Co. is drilling in lime rock at 2,070 feet in No. 2 Union Saw Mill, Section 28-17-12. Garrett and others tested dry with a small show of oil and are arranging to deepen thorugh liner at 2,220 feet.

The Gulf Refining Co. set 10-inch in No. 1 Clawson, Section 14-16-15 and is drilling in gumbo at 1,005 feet. In Section 17-16-15 tested casing o. k. at 1,947 feet and arranging to drill in at 1,950 feet in No. 3 J. G. Murphy. In Section 5-16-16 drilling in lime at 1,810 feet in No. 12 Lewis Werner and in Section 35-15-17 set 10-inch at 745 feet in No. A-1 Lewis Werner, formerly reported No. 13.

Harrell and others are drilling at 2,435 feet in No. 1 Tule, Section 11-19-12. Haveland and others have rig up but awaiting fuel for No. 1 Jameson, Section 23-16-15. Hodges and others set surface 10-inch and drilled to 1,440 feet in No. 1 Murphy, Section 7-16-15. The Humble Oil & Refining Co. is drilling in gumbo at 1,600 feet in No. 3 E. G. Murphy, Section 15-16-15. In Section 14-16-15 set surface 15½-inch in No. 4 E. G. Murphy, and has derrick up for No. 5 E. G. Murphy.

The Magnolia Petroleum Co. is drilling in shale at 1,700 feet in No. 5 Moody, Section 8-17-14. The Natural Gas & Petroleum Co. is drilling with cable tools at 2,120 feet in No. 1 Murphy, Section 17-16-15 and arranging to test at 2,015 feet in No. 1 Primm, Section 1-16-16, with no sand in evidence. Page and others started drilling and set surface 15½-inch in No. 2 Alphin, Section 23-16-15. The Pure Oil Co. has derrick pattern on location for No. 3 Craig, Section 15-16-15.

The Quaker City Petroleum Co. set surface 12½-inch and drilled to 720 feet in No. 1 Sloan, Section 14-17-15. Sam Richardson and others drilling in gumbo at 1,820 feet in No. 1 E. G. Murphy and set surface 12½-inch and dril'ed to 960 feet in No. 2 E. G. Murphy, Section 23-16-15. The Roxana Petroleum Co. set 6⅝-inch at 1,950 feet in No. 4 Wells, Section 15-16-15. Ray and others resumed operations on No. 1 Long, Section 28-16-14 and washing to bottom at 1,960 feet.

Sanford and others set surface 10-inch and drilled to 1,400 feet in No. 1 Murphy, Section 8-16-15. The Smackover Petroleum Co. is rigging up to drill No. 2 Murphy, Section 14-16-15. The Standard Oil Co. set 4½-inch at 1,915 feet and drilled to 1,930 feet in No. 10 Alphin, Section 11-16-15. In Section 22-16-15 set 6-inch at 1,920 feet in No. 1 Lingleback. In Section 5-16-16 set surface 10-inch and drilled to 35 feet in No. B-3 Saxon and waiting on standard rig for No. C-1 Saxon at 2,270 feet. Stark and others are drilling at 2,200 feet in No. 1 Little, Section 21-16-12. The Sun Oil Co. set 8-inch at 1,830 feet in No. 4 Hays, Section 3-16-15.

Willroy and others have rig up but are awaiting fuel for No. 1 Goodwin, Section 23-16-15. Woolley and others set surface 10-inch and drilled to 1,285 feet in No. 2 Townsend, Section 6-18-14.

Ouachita County Area

Eight producers were reported from this area, the largest well flowing 400 barrels daily and with the exception of two wells the production was in the light oil territory. The Arkansas Natural Gas Co. completed No. 2 Patton, Section 31-15-16, flowing 250 bbls. at 2,260 feet and No. 3 Patton, Section 30-15-16, flowing 40 bbls. at 2,265 feet.

Burch Walker completed No. 4 Patton, Section 31-15-16, flowing 200 bbls. at 2,175 feet. The Owenwood Oil Corp. completed No. 2 Snyder, Section 34-15-15 in the heavy oil territory, flowing 400 bbls. at 1,970 feet. In the southeastern heavy oil territory the Standard Oil Co. completed No. 9 Hardy, Section 4-16-15, pumping 30 bbls. at 1,995 feet and in Section 29-15-16 completed No. 2 Solmson, flowing 175 bbls. at 2,285 feet.

The Sun Oil Co. completed No. 2 Patton, Section 31-15-16, swabbing 100 bbls. at 2,255 feet. White and associates completed No. 2 Watt, Section 30-15-16, flowing 200 bbls. at 2,280 feet.

Drilling Operations

A summary of operations for the Ouachita County area shows 3 wells waiting on standard rig to pump; 10 temporarily abandoned; 57 drilling; 2 rigged up; 21 derricks and 2 locations. Most of the drilling wells are in the northwestern area of the light oil territory. Dr. Clark's No. 1 Barry stands full of oil waiting on standard rig at 2,280 feet, 27 feet sand, Section 24-15-17.

The El Dorado Union Oil Co. is bailing to test No. 2 Shirey at 2,288 feet, Section 30-15-16 and has derrick up for No. 3. Its No. 2 Smith, Section 36-15-17 is standing full of fluid, 25 per cent salt water at 2,285 feet.

Giles and others are bailing No. 2 Watt at 1,850 feet, Section 30-15-16. The Gulf Refining Co. is pulling casing to abandon No. C-1 J. H. Dawson at 3,010 feet, Section 10-15-18 in wildcat territory.

The Houston Oil Co. in Section 27-15-16 has No. 2 Reynolds standing 1,000 feet in oil and arranging to set 2½-inch packer at 2,039 feet.

The Metric Oil Co. has junked and temporarily abandoned No. 3 Horton at 2,323 feet, Section 36-15-16. The Oilfield Corp. has taken over No. 2 McKenzie and is sidetracking liner at 2,004 feet, Section 36-15-16. The well was formerly reported completed as Robert Edmond's McKenzie No. 2 a year ago as a 1,000-bbl. well at 2,017 feet.

The Peer Oil Co.'s No. 1 Mullins stands 1,000 feet in fluid, 50 per cent salt water and is waiting on standard rig at 2,315 feet, Section 27-15-16. The Pure Oil Co. has a fishing job at 2,415 feet in No. 1 Moline Timber Co., Section 21-11-17, wildcat territory.

The Penguin Oil Co. has decided not to deepen No. 1 McDonald which has been standing idle for some time at 1,965 feet, Section 1-16-16. They have rig up for No. 2 Hardin, Section 27-15-16.

The Woodley Petroleum Co.'s No. 1 Patton stands 1,800 feet in oil and is arranging to set tubing and packer at 2,255 feet, Section 32-15-16.

Stephens Field

Columbia County Area: No wells were completed in this territory and very little drilling is under way. The Atlantic Oil

(Continued on Page 91)

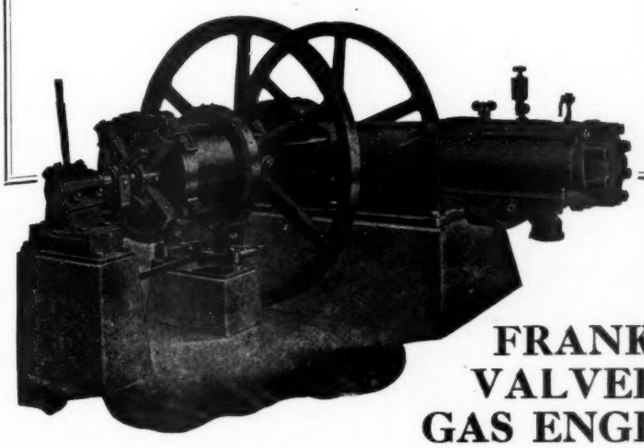
"A Good Stout Engine"

is the verdict rendered by another OLD-TIME OIL PRODUCER only after ten years good, hard, successful usage. Here is what Mr. Kerr of ———— Oil Company, has to say:

"We have a number of FRANKLIN VALVELESS GAS ENGINES in use in the Junction City part of the field that have been in use for about 10 years that are giving good service at this time, and I think they will continue to give the same service for a long time. We have had some trouble with the ignition on these engines, but I think our trouble was as much the fault of the man operating the engine as anything else. They are a good, stout engine and I believe with the proper care will do as good work as any engine in the field."

Year by year as the industry is developed the demand grows for Gas Engines capable of performing almost incredibly exacting operations —all of these requirements are met by the FRANKLIN VALVELESS ENGINE.

Our descriptive bulletins tell why



FRANKLIN VALVELESS GAS ENGINES

FRANKLIN VALVELESS ENGINE COMPANY

FRANKLIN, PENNA.

Distributed in Oklahoma, Kansas, Texas, Louisiana and Arkansas by Atlas Supply Company, Muskogee, Okla., and branches

Ohio and West Virginia by New Martinsville Supply Company, New Martinsville, W. Va.

Fields of the Central West

By Whit

Sun Oil Co. completed 260-bbl. producer in old Trenton Rock Field, Ohio. Small gasser finished within corporate limits of Van Wert, Ohio. Logan Gas Co. has 10-bbl. well in Coshocton County. Wildcat test near Stockdale, Ohio, has promise of being commercial producer at 491 feet.

FINDLAY, Ohio., Dec. 10.—Very little developed during the week in any section of the Central West Field, the bulk coming from the Central Ohio area. The best well for the entire area was in the old Trenton Rock Field of northwestern Ohio and in the Tiffin Field.

This well is the Sun Oil Co.'s second test on the southwest corner of the H. H. Seiple farm, in the northwest quarter of Section 15, Eden Township, Seneca County, and showed a production of 260 bbls. Top of the Trenton sand was found at 1,690 feet and drilled 290 feet in to a total depth of 1,950 feet. No. 3, same farm, is now drilling near the sand, but no prediction can be made on any development in that field, for every well is practically a test, as the formation where the big wells are found is crevicy, and a crevice must be found to get a well of any promise. This territory shows the best staying qualities of any section of the Trenton Rock Field.

The Northwestern Ohio Natural Gas Co. of Toledo, drilled in a test on the S. F. and F. Metzger farm, mapped as the J. H. Hampshire farm, in the northeast quarter of Section 29, Center Township, Wood County, and brought in a gas well at a depth of 1,205 feet. The well is small, being estimated at 50,000 feet. This is the first well drilled by this company in a great many years.

In Spencer Township, Allen County, the South Fork Oil Co.'s test on the Edward Reynolds, Section 27, pumped 8 bbls., and the Ohio Oil Co.'s No. 7 Bailey & Morey farm, Section 1, pumped 10 bbls. In Marion Township, same county, the Federal Oil Co.'s second well on the Frederick Miller, Section 11, pumped 4 bbls.

In the corporate limits of Van Wert, in Pleasants Township, Van Wert County, the Home Gas Co., of Van Wert, drilled a test on the line of the C. F. Wesenberg and C. S. Feigus lots, in the southwest quarter of Section 13, and brought in a light gas well. The well is a valuable asset to the town and will help out for fuel purposes. In Jennings Township, same county, the Stanley Oil Co.'s test on the Amos Burnett farm, in the southeast quarter of Section 28, and in the northeast corner of the farm, pumped 3 bbls., making quite an extension to the producing area of the field.

In Logan Township, Auglaize County, Loeber & Work's No. 3, on the W. Brincefield, Section 6, pumped 3 bbls.

Central Ohio

The Central Ohio Field's most important well reported for the week is the test of the Logan Gas Co. on the Martin Mizer farm, Section 18, Newcastle Township, Coshocton County, which is showing for a 10-bbl. well, but will be given a shot before being put on the pump. This company also has a location to drill on the William Johnson farm, in Section 13.

In Rush Creek Township, Fairfield County, the Ohio Fuel Gas Co. reports a dry hole at its test on the Alta R. Barr farm, Section 7, and a fairly good gas well at a test on the F. E. Drum, Section 15, Richland Township, same county. In Union Township, Licking County, the Logan Gas Co. is starting the drill at its test on the Della Embrey 151 acres, Section 9.

In Clay Township, Knox County, the Heisey Gas Co. reports a small gas well at a test on the Charles C. Green 156 acres, Section 13, with No. 2 drilling. In Butler Township, the Ohio Oil Co. got a dry hole in its test on the W. B. Griffin 243 acres, Section 22, and in Brown Township, the East Ohio Gas Co. is drilling at its No. 1 Donald Colopy, Section 23.

In Hanover Township, Ashland County, the Logan Gas Co. got a fair gas well at a test on the L. E. Cady, Section 8, and the East Ohio Gas Co., one of the same kind at No. 1 F. M. Date, Section 8, and drilling No. 1 Emanuel Kick, Section 26. Same company made a location for a test on the William Parrott 80 acres, Section 23, and No. 1 on the G. Hans 80 acres, Section 27.

In Congress Township, Hulse & Koontz drilled in a light gas well at a test on the J. B. and Alice Gindelsperger, Section 14. Wayne Township, Burtner, Morgan & Stephens' No. 1 on the W. H. & M. D. Reese, Section 5, is an exceptionally good gas well. The Pittsburgh-Wooster Oil Co. has made a location for No. 3 on the Imgard Brothers' 39 acres, Section 16, and the Ohio Fuel Gas Co. a location for No. 1 on the D. L. Zimmerman 141 acres, Section 3, and drilling No. 1 Charles Pressler 84 acres, Section 5, Wayne Township. The Logan Gas Co. is drilling No. 1 Edmonds farm, Section 1, same township. In Cannan Township, Wayne County, Bowers and others drilled in an average gas well in No. 1 on the C. B. Whonsettler 6 acres, Section 2.

Complete Gas Wells

In Carthage Township, Athens County, the Logan Gas Co. drilled in a light Keener sand gas well in the Arthur Cole, Section 4, and Kempf & Bailey, one of the same kind at No. 5 on the C. Basin 180 acres, same section. In Rome Township, same county, Rose & Blosser drilled a light stray sand gas well at No. 2 H. McGraw 148 acres, Section 23. In Sutton Township, Meigs County, the Ohio Fuel Gas Co. drilled a good gas well at a test on the David N. Nease 92 acres, Section 25, and drilling at its No. 1 on the Burdett Parker 116 acres, Section 13, Rutledge Township, Meigs County.

In Litchfield Township, Medina County, J. F. Hogan and others' No. 3 along the south line of the W. Anderson farm, Lot 1, was abandoned as dry.

There is a little excitement in the area south of Columbus, near Stockdale, in Pike County, and west from Jackson and Vinton Counties. The Stockdale Oil & Gas Co. has been doing a little wildcatting in that vicinity and just completed its sixth well located on the Oscar Brown farm, 3 miles east of Stockdale, and it has all the earmarks of a commercial producer from the Berea sand at a depth of 491 feet. The fifth well drilled by this company is also a light producer from that well known formation, and the drillers claim the farther west they move in their testing, the better results they obtain and if this proves true, commercial production should be found in Adams, Scioto and Brown Counties, along the Ohio River. The test wells are located a little east of north of the river town of Portsmouth and south of Chillicothe. This area is practically in the Clinton sand belt, and deeper drilling to that well known formation, might bring forth much better production. South of this development is the well known shale beds that are rich in oil.

Eastern Kentucky Field

But few completions were reported from fields of eastern Kentucky during the week. In the North Weir Field, the Union Gas & Oil Co. reports a few completions above the average. Its No. 17 on the Proctor Sparks farm, near Ayresville, is reported a 75-bbl. flush producer; No. 6 L. P. Ferguson farm, 30 bbls. flush and No. 12 Levi Skaggs farm, 30 bbls. flush. These wells are in the Lawrence Johnson County area of the field.

In the South Weir Field of Johnson-Magoffin Counties, R. G. Gillespie's No. 10 Darious Conley farm; No. 10 on the Sam Blanton 125 acres, and No. 2 J. B. Ayres farm, are reported at 10 bbls. each. The Bed Rock Oil Co.'s Nos. 13 and 14 J. H. Arnett farm, reported at 10 bbls. each. In the Flat Rock area, the Carter Oil Co.'s No. 4 D. M. Wheeler, is reported at 4 bbls. The Atlantic Oil Producing Co.'s No. 11 on the Henry Cantrell 40 acres, is a 10-bbl. producer, as is the Burning Fork Oil Syndicate's No. 1 Mollie Salyer farm.

There is quite a little activity displayed in the Hotmire area of Pike Township, Jay County and Ward Township, Randolph County, in the old Trenton Rock area of eastern central Indiana, and the wells are far above the general average of the flush wells of the State and according to advice from the pool, the wells drilled some two years ago in the pool are averaging around 7 bbls. each. Two large deals have been recently consummated in the pool. Mack P. Colt, of the National Supply Co., of Lima, Ohio, has purchased the one-half interest of C. H. Reese, in the Masters & Reese lease on the A. Ritenour farm, in Section 34, Pike Township, for a consideration given as $45,000, and Masters & Colt are drilling Nos. 11 and 12 and starting Nos. 13 and 14 on the lease.

In the same pool, H. Chaney of the Omar Oil & Gas Co. bought the Masters interest in the M. Mock lease, Section 35, for a consideration of $71,000.

N. E. Masters has drilled in his No. 4 on the Fannie Lyons, Section 34, Pike Township, with a flush production of 70 bbls. and No. 5 is getting under way. Masters, Bundy & Thompson drilled in No. 7 Rathburn farm, Section 35, for a flush of 120 bbls. and drilling No. 8. H. Chaney drilled in his No. 1 on his own land, Section 35, for 90 bbls. flush and starting No. 2. Chaney & Masters' No. 4 M. Mock, Section 35, showed a flush of 72 bbls. with No. 5 under way.

In Ward Township, Randolph County, in the Hotmire Pool, Charles Brandt, the old time oil man, has drilled in his No. 1 Barr farm, Section 1, for a flush of 60 bbls., while No. 2 did 10 bbls.

Illinois Field

But two completions were reported from the Illinois Field during the week, and both were in Crawford County. In Honey Creek Township, James Pease and others' well on the L. N. Tohill, Section 31, pumped 7 bbls. from 977 feet, and in Montgomery Township, the test drilled by Phipps & Blosser on the L. S. Smith, Section 28, showed but 1 bbl. at 956 feet.

Kansas Oil Field News

By C. D. Lockwood

The wildcat test in Russell County, being drilled by the M. M. Valerious Oil Co. and others, and carried by many companies as Liggett and others' No. 1 Oswald, in the SW cor. SE, Section 8-12-15w, has so usurped the attention of scouts and officials of all companies that little other news has come out of the Kansas fields during the week in review, most of the scouts having spent the entire week at the well.

At last reports, this test was standing with a hole full of oil, having been drilled two feet in the sand, topped at 2,998 feet, and was showing considerable gas. On Saturday, it made four flows in 40 minutes and was variously estimated as good for from 150 to 250 bbls. It was to be drilled 2 feet deeper Tuesday morning.

The third well in the new pool opened up in Montgomery County during September by the Red Bank Oil Co.'s No. 1 Alloway, in Section 17-35-17, which was good for 100 bbls. daily in sand topped at 1,216 feet, was due to be drilled in Tuesday. It was the Elco Petroleum Co.'s well in the CSL SW, Section 2-35-17, Labette County. The second well in this pool was the Red Bank Oil Co.'s No. 1 Lowery, NW cor. SE NW, Section 17-35-17, which came in at the rate of 285 bbls. the first 24 hours, sand being found at 1,191 feet. The same company is now drilling below 1,000 feet in its No. 1 Tulliaferro in the same section.

The Champlin Refining Co.'s No. 1 Hitchcock, in the NW cor. NE, Section 16-30-1w, Sumner County, is creating considerable interest partly because of the mystery surrounding it. The oil is reported to be of high gravity, and at last available reports the bit was still in the sand at 3,566 feet, the top having been found at 3,538 feet, and 1,200 feet of oil was standing in the hole.

The number of operations in the Kansas fields increased by 17 during the week ended December 1, the total amounting to 216 in comparison with 199 for the week before. This was due in large part to the increase in the number of drilling wells. The figures for the two weeks were as follows: On December 1, there were 30 locations, 52 rigs, 61 wells drilling and 73 wells shut down. On November 24, there were 29 locations, 52 rigs, 48 wells drilling and 70 wells shut down, showing little change except for the increase in the drilling wells.

In Other Counties

In Harvey County, Shawver & Sutter were spudding their No. 1, SW cor. NW, Section 3-23-2, and Frank Wahn and others were drilling at 350 feet in their No. 1 Brown, SE cor. Section 33-22-2.

In Butler County, the Mohutka Oil Co. was drilling at 700 feet in its No. 6-A Hance, NW cor. NE SE, Section 27-22-5, a twin to a lost hole.

In Elk County, the Rothburt Oil Co.'s No. 3 Porter, CWL SW, Section 12-29-8, was making 200 bbls. of 39.4 gravity oil after a 160-quart shot in sand at 2,061-2,100 feet. Mitchell and others' No. 1 Perkins, CWL SE SE, Section 33-29-9, was a 1,500,000-foot gasser in sand at 1,508-18 feet. Roth & Co. was drilling No. 1 Westfall, NE cor. SW, Section 13-29-8, at 850 feet.

Another Elk County gasser was Webster and others' No. 1 Swartz, CNL NE NE, Section 17-29-12, which was good for 1,00,000 feet in sand at 1,801-12 feet. Clark and others' abandoned their No. 1

(Continued on Page 92)

The Cost of a Kink

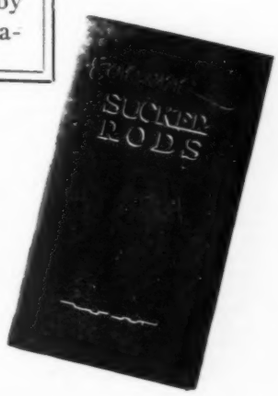
Don't let your Sucker Rods get kinks or sharp bends—for if you do it is going to mean breakage, delays and expense.

We have spent many thousands of dollars in making an exhaustive study of just how Sucker Rods are used by men in the various fields—the results of this investigation are compiled in a book "CONCERNING SUCKER RODS" which we now offer for distribution, FREE. Read and properly digested, this little book will save thousands of dollars for many companies.

THE S. M. JONES COMPANY
TOLEDO, OHIO

Established 1893

A copy will be mailed to you on request



JONES ACME STEEL SUCKER RODS

Pennsylvania-West Virginia

By D. S. Wakenight

Few completions in Eastern Field, and only two better than small pumpers. Atha Oil Co.'s No. 5 Melick Brothers, Perry County, southeastern Ohio, swabs 45 bbls., but being shot increases to 90 bbls. Imperial Oil & Gas Products Co.'s No. 3 Mason, Doddridge County, West Virginia, makes 60 bbls.

PITTSBURGH, Pa., Dec. 10.—Generally speaking, the Eastern fields made a very poor showing during the past week. There were not many completions, but two better than small pumpers, the southeastern Ohio fields having one and West Virginia one. The Ohio well is the bettter, the Atha Oil Co.'s No. 5 on the Melick Bros.' farm, in Section 20, Madison Township, Perry County. At 22 feet in the Clinton sand the hole began to fill up and they swabbed 45 barrels the first 24 hours. A few days later it was given a shot and the ensuing 24 hours placed 90 barrels to its credit, several flows going over the top of the derrick. In Section 23, Washington Township, Monroe County, the Bentz Oil & Gas Syndicate completed a good gasser in the Big Injun sand at a test on the James Howell farm. In Lot 12, Newton Township, Licking County, I. J. Denbow & Co. drilled a test on the Cary Weiss farm through the Berea grit and dry. In Madison Township, W. W. & A. T. Wehrle completed a second test on the C. R. Fetty farm, a very light pumper in the Berea.

In the northeast corner of Section 28, Green Township, Hocking County, Kelch Bros.' test on the Howard Chutes farm is dry in the Berea grit. This is about 1 mile west of the Ohio Fuel Supply Co.'s test on the Green Hill Stock Farm. In Section 26, Ward Township, the Arkansas Natural Gas Co. has a light gasser in the Berea grit at a test on the H. Green lot.

Drilled a Deep Test

In Section 25, Lawrence Township, Washington County, James Baldwin & Co. did not stop when they drilled through all shallow sand at a test on the J. D. Templeton heirs' farm, but went on through the Gordon sand, a total depth of 2,505 feet and found nothing. It has been abandoned. In Newport Township, Washington County, Elsie Martin & Co.'s test on the Isaac Mendenhall farm is a light pumper in the Keener sand. In Independence Township, F. H. Leidecker & Co. have a 2-bbl. pumper at No. 3 on the Edward Matheny farm. In Rumley Township, Harrison County, Grant Sincell & Co. have a light gasser in the Berea grit at a second test on the John Duswald farm, 600 feet east of the first test. In Section 10, Madison Township, Licking County, the Ohio Fuel Supply Co.'s test on the Daniel Shaw farm is a light gasser in the Big Lime formation. In Clay Township, Knox County, the Rocky River Oil Co. started to drill on the H. B. Evans farm.

West Virginia

Doddridge County furnished one of the best producers completed in the West Virginia fields during the past week. It is the Imperial Oil & Gas Products Co.'s No. 3 on the W. A. Mason farm, in Central district in defined territory. The well is producing 60 bbls. a day from the Big Injun sand. In Butler district, Hancock County, the Clearwater Torpedo Co. completed and shot in the Berea grit No. 3 on the J. M. Scott farm, a very light pumper, 400 feet west of the first test. In Clark district, Harrison County, the Gresselli Chemical Co.'s No. 5 on the R. G. Davis heirs' farm is dry in the fifth sand. In Union district, the Philadelphia Co. started to drill its producer on the Mary L. Young farm to the Speechley sand. In Grant district, the Grasselli Chemical Co. is drilling at 2,150 feet on the Margaret Reed farm. In Union district, the Vesper Oil & Gas Co.'s old gasser on the J. B. Losh farm is drilling from the fifth to the Speechley sand. In Union district, Ritchie County, Joseph Goff's test on the Andrew Goff farm is a gasser in the Big Injun sand. In the same district, the Hope Natural Gas Co.'s test on the I. M. Pasen farm is a gasser in the same formation.

Cabell County Developments.

On Mud River, Grant district, Cabell County, the Commercial Gas Co. completed in the Big Lime a test on the S. J. Kendle farm, a gasser good for 2,000,000 feet a day, the best found in that locality. The same company has the rig completed on the Mary J. L. Lucas farm. On Charley's Creek, J. H. Harshbarger & Co. started to drill No. 4 on the Andrew Conner farm. On Buffalo Creek, Carroll district, Lincoln County, the Cambridge Gas & Carbon Co. is drilling a test on the Arthur Curry farm. On Yellow Creek, Sheridan district, Calhoun County, the Chemical Oil & Gas Co.'s No. 12 on the A. C. Fisher farm is drilling. On Leatherwood Creek, Big Sandy district, Kanawha County, the Cosmos Carbon Co.'s No. 13 on the Osborne Bros.' farm is a light pumper in the Weir sand. The rig for No. 14 has been completed. On Finches Creek, Fairmont district, Marion County, the Owens Bottle & Machine Co. has rig material at a location on the Earl Wise farm. On the John Amos farm in Lincoln district, Funk & Null are drilling down an old gasser.

Gas Companies Active

The gas companies are the most active in the search for new producing territory. With the old fields declining they are forced to go far afield. In Curry district, Putnam County, the Dunbar Gas Co. has started to drill on the Callehan Grass farm. In Carroll district, Lincoln County, the Laurel Development Co. is drilling a second test on the Elizabeth Malone farm. In Greenbrier district, Doddridge County, the Raccoon Oil Co. is rigging up on the August Drainer farm. The Hampton Oil Co. has started to drill on the Isaac Hannah farm in Sardis district, Harrison County. In New Milton district, D. W. Gribble made a location on the J. P. Burbige farm. In Church district, Wetzel County, the Parry Gas Co. started to drill on the Zura Himilrick farm. In Cameron district, Marshall County, the Natural Gas Co. of West Virginia drilled to a depth of 2,710 feet on the Wyat Hughes farm and shut down for orders. Nothing had been found. In Clay district, Wetzel County, the Manufacturers Light & Heat Co. is hauling timber to a location on the K. Cosgray farm. In Center district, the Hope Natural Gas Co. is rigging up on the C. E. Brown farm. In Liberty district, Marshall County, the Manufacturers Light & Heat Co. started to drill on the Frank Chambers farm. It also made a location on the Lucinda Burge farm.

Wildcats in Logan County

In Logan district, Logan County, Zohnheimer & Gibbs are down 2,200 feet at their wildcat on the Cole-Crane tract. In the same district the Wacatock Producing Co. is rigging up on the Dingess Run Coal Co.'s tract. In Sherkan district, Boone County, Godfrey L. Cabot is drilling on the White farm. In Scott district, the Shields Oil & Gas Co. is due in the sand on the J. M. Hopkins farm. The Ohio Fuel Oil Co. is building a rig on the J. Byrne Boggs farm in Otter district, Clay County. In Simpson district, Harrison County, the Aizpurin Oil Co. is rigging up on the Bertha Maxwell farm. In the same district, the Bridgeport Oil & Gas Co. started to drill on the C. G. Gawthrope farm. In Union district, Wood County, Bowser & Eka started to drill on the Amanda Brown heirs' farm. In Murphy district, Ritchie County, Smith & Co. have a rig up on the H. C. Andrews farm.

In Curry district, Putnam County, the Dunbar Gas Co. made a location on the A. F. Byrnside farm. In Clay district, Wetzel County, the Annes Gas Co. is drilling on the Gergie Spragg farm. In Liberty district, Marshall County, Clue Bros. are due in the sand on the J. M. Mason heirs' farm. In New Milton district, Trainer & Summers started to drill on the Paul Allen farm. In the same district, Trainer & Travis have a rig up on the Frank Maxwell heirs' farm.

On Wheeling Creek, Union district, Marshall County, the Manufacturers Light & Heat Co. has a gasser in the first Cow Run sand at No. 5 on the A. M. & Emma Schenk farm. On Wolf run, Sardis district Harrison County, the Clarksburg Light & Heat Co. is starting a test on the L. Q. Gains farm. In Mannington district, Marion County, the Pittsburgh & West Virginia Gas Co.'s test on the Aaron Furbee farm is a light producer in the fifth sand. In the same district, the Carnegie Natural Gas Co. has a Big Injun sand gasser on the E. O. Murray farm. In Scott district, Boone County, the Dennison Oil & Gas Co. has a gasser in the salt sand at a test on the Sarah Price farm. In Clay district, Ritchie County, J. B. Yates & Co.'s second test on the R. T. Haywood heirs' farm is dry and abandoned. In Harrisville district, C. E. Braden & Co. had the same luck at a test on the P. C. Moats farm.

Late Completions

In Webster district, Marshall County, the City & Suburban Gas Co. has a duster in the Gordon sand at No. 3 on the John Harsh farm. In Batteile district, Magnolia County, the Manufacturers Light & Heat Co.'s test on the W. L. Jackson farm is showing for a very light pumper in the Gordon sand. In Washington district, Lincoln County, the White Sand Petroleum Co.'s No. 6 on the Reece Pauley farm is a gasser in the Big Injun sand. In Jefferson district, the Bear Branch Development Co. has a gasser in the same formation at a test on the Spencer Hill farm. In Union district, Wood County, the Sleppy Oil Co.'s No. 15 on the H. S. Alleman farm is a 2-bbl. pumper in the Cow Run sand. In Spencer district, Roane County, the Poole Oil & Gas Co.'s second test on the Mary E. Poole farm is a light pumper in the Big Injun sand.

Southwest Pennsylvania

In Morris Township, Greene County, the Waynesburg Gas Co.'s test on the J. T. Clutter farm is dry in all sands. In the same township, the company is drilling on the R. S. Huffman farm. In Washington district, the Carnegie Natural Gas Co. has a gasser in the Gordon sand on the Emma Williard farm. In Wayne Township, the Philadelphia Oil Co.'s second test on the James Powell farm is a gasser in the fifth sand. In Springhill township, Bundy Bros. & Co. have a gasser in the Big Injun sand on the John Waters farm.

West Kentucky—Tennessee

By Vern T. Whitney

BOWLING GREEN, Ky., Dec. 10.—The most important feature of the week in the western Kentucky Field was the completion of the Paragon Development Co.'s No. 1 M. L. Spear, in the Modoc district of Cumberland County. It pumped 85 bbls. the first 21 hours from a crevice found at from 970 to 975 feet. Shale was found from 290 to 350 feet, first Sunnybrook at from 584 to 588 feet. The second Sunnybrook at 833 feet showed black sulphur water. Pencil Cave was encountered from 917 to 935 feet. The elevation showed this test to be 26 feet lower than the Riddle well of E. M. Treat & Co., 300 feet west.

In the Kettle Creek district, No. 1 Turn Smith, which has been pumping a large amount of salt water with only a slight amount of oil, has come on oil and last Tuesday put 800 bbls. of oil in tanks. This oil was first pumped into earthen storage with the salt water and then pumped from the pond into storage tanks. In October the owners of this property started pumping with a 60-H. P. compressor, unique in this field, and their untiring efforts have rewarded them well. In this same district, No. 3 Bud Kerr was finished at 240 feet, first Sunnybrook sand, and on test it made 180 bbls. the first 48 hours.

In Metcalf County, the first producing well ever completed below the black shale, in the county, was finished on the Bell farm near the town of Alone, on Little Barren River. It is pumping 8 bbls. at 338 feet. No. 2 on the same property was dry.

The best well of the week in Warren County was the Plantation Consolidated Oil Co.'s No. 10 W. A. Gott 75 acres in the northeast extension area. The well came in at 441½ feet, in the Mississippian lime, and will make 75 bbls. It will be tubed and pumped from this depth, and drilled to below the shale sands at some later date.

In Pickett County, Tennessee, unknown parties are reported to have drilled in a 50-bbl. well near the town of Byrdstown in the northeast part of the county. It was completed in the Trenton sand at 1,600 feet and is reported to have filled up 1,500 feet, naturally.

Week's Work

A summary of the week's work shows an increase of 438 bbls. in production, the same number of completions, three less producers, two more dusters and one more gas well compared with last week's figures. The wells were distributed as follows:

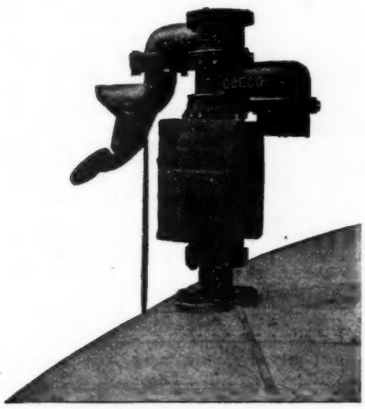
County—	Comp.	Wells	Prod.	Dry	Gas
Metcalf	7	1	8	5	1
Allen	5	3	42	2	0
Cumberland	3	3	475	0	0
Warren	3	3	82	0	0
Clay, Tenn.	2	0	0	2	0
Pickett, Tenn.	1	1	50	0	0
Monroe, Ky.	2	0	0	2	0
Total	23	11	657	11	1

(Continued on Page 89)

OCECO

"Raising the Roof"

Won't happen with OCECO



OCECO Vent Valve

As little as 1 ounce of pressure—the pressure at which the average valve is set—may not seem sufficient to raise the roof of the average conical tank.

But figure it on a square foot basis ---then it's evident why the roofs sometimes bulge.

And that's why all OCECO valves are set at only ½ ounce pressure. *Consequently OCECO equipt tanks don't bulge.*

Another OCECO feature that helps to explain the "why" of OCECO value and OCECO leadership.

Have you a copy of our late catalog?

THE OIL CONSERVATION ENGINEERING COMPANY

Manufacturers of fire-prevention and evaporation-prevention equipment for tanks

Addison Road and N. Y. C. Tracks **Cleveland Ohio**

San Francisco, Calif.,
440 Howard Street
Tulsa, Okla.
220 Iowa Building

New York City
140 William St.
Republic of Mexico
Tampico—Mexico City—Monterrey
Beaumont Export & Import Company
Distributors

Los Angeles, Calif.
318 E. 12th Street
Beaumont, Texas
401-403 Perlstein Bldg.

OCECO

Must Fight Bad Legislation From Start

Oil Industry Warned of Methods of Congressional Law Making and Need For Representative Contact With Members

By Charles E. Kern

WASHINGTON, D. C., Dec. 10.—Whenever the oil industry of the United States undertakes to protect itself from hostile legislation by Congress it should acquire a knowledge of the primary methods by which such legislation is enacted.

There may be some similarity between the enactment of laws here and in State Legislatures, but Congress is so different in its activities and peculiarities that it really stands alone among law making bodies. Standing out prominently in every industry engaged in protecting itself from hostile action is the necessity of catching the vicious law intended to be enacted at the moment of its birth. The farther legislation proceeds towards final enactment the more difficult it is to obstruct it. Many important measures go practically unnoticed until they are actually passed by one House of Congress. While explanation might have been offered to destroy it at the beginning, when it first appeared in the form of a bill, it often becomes a hard matter to deal with when it has been given the dignity of a half-enacted law passed by the Senate or House of Representatives. In the course of its progress it has received the sanction of numerous men ignorant of its real intent. They have compromised themselves by having made promises to its proponents and with the best of intention they are embarrassed in attempting to turn against their own legislative child for fear of criticism of having yielded to "sinister influences." It is quite in style to brand a Congressman as being under these "sinister influences" whenever he has favored some measure with only a half knowledge of its purpose and effect, and, then being brought to a full understanding of its provisions, turns against it, either wholly or by suggesting amendments.

Fear Lobbyists

As the proponents of legislation are frequently influential organizations a man with any desire to remain in public life here in Washington will think twice before he opposes them. To criticize and oppose their measures intelligently he must have information which he can obtain only from the interests that are the subject of attack. He is generally anxious to know all sides of proposed legislation even though he may be inclined to ignore some of the facts brought to his attention. At the very initiation of legislation he can state his objections and decline to be a party to efforts to forward the objectionable bill. That stand, taken at the beginning, would do him little harm politically, but once he has assisted in passing a measure through a sub-committee or a committee, he is placed in quite another position.

To succeed in looking after legislation known to be hostile to the oil industry in Washington, existing conditions under which such legislation is enacted must be understood. Senators and Representatives are very human and they must be considered for exactly what they are. In nearly every instance these gentlemen would not have been in Congress if they had not made some effort to get there, and having made that effort it is very natural that they wish to continue in their congressional duties for more than one term.

They have as their constituents about a thousand owners of automobiles who think gasoline is too high in price to every oil producer and refiner who often struggle with their balance sheets to continue pumping or refining petroleum. They hear a great deal more from a man who uses a gallon of gasoline daily than they do from a producer or refiner who handles hundreds or thousands of barrels of petroleum daily. The gasoline user is more cock-sure of his opinion that the price of gasoline is extortinate than the producer and refiner is that the industry is frequently not paying enough to place it on an equality with other industries in dividends.

In the Congress just assembled there are 435 Representatives, of whom 115 are new members, and 96 Senators, of which number 18 are coming to Washington for the first time, being about 25 per cent of new members in the House and 20 per cent new members of the Senate. In most instances the new Senators or Representatives have been elected on issues that require them to fight "the interests."

These new Senators and Representatives, in most instances, are not familiar with the legislative methods that prevail in Congress, although many of them may have served in State legislatures. There is quite a distinction between service in a State legislature and the United States Congress. Many of them are not lawyers and are more accustomed to think of putting through certain ideas concerning legislation that have been discussed in their home communities than they are of following legal methods to accomplish their purposes without doing more injury than good. They are as sincere as the average man in any other line of activity and a great many of them would like to be the sponsors of sound legislation that would rebound to their credit and stand the test of time. All of them would welcome information on the variety of difficult questions that come before them so they might achieve reputations for being men of information and sound judgement.

Flood of Bills

In the two years of the last Congress there were introduced in the House of Representatives 14,461 bills and 444 joint resolutions, while in the Senate there were introduced 4,658 bills and 290 joint resolutions. This does not include hundreds of simple resolutions passed by one house or the other. It will be seen that there were introduced in both houses of Congress nearly 20,000 bills and joint resolutions from which were enacted 550 public laws, 104 public resolutions and 276 private laws, a total of 930 separate laws, many of which embodied a variety of subjects.

This array of laws enacted in a single Congress comprising two years is sufficient to make people understand that when a bill is introduced there is considerable likelihood that it will become a law and, therefore, that it is worthy of attention in the first stage of its passage through the legislative mill. Besides these laws actually passed there were hundreds of other bills that made considerable progress towards final enactment and that will be again introduced in the present Congress with the prestige of whatever progress they made up to the time the last Congress expired.

The press associations and newspapers generally cannot pay much attention to a measure pending in Congress until it reaches the dignified stage of having passed by the Senate or House, and usually no attention is paid to legislation not especially conspicuous, nationally or purely of some local interest, until it has gone far toward becoming a law. Yet such legislation may have widespread influence on the oil industry or some other branch of business.

Must Be Watched

Senator Dillingham of Vermont once told the writer of an acrid letter he had received from one of his constituents interested in the manufacture of balance scales in his State. They complained that a bill had been passed by the Senate involving what they considered an injustice to their business and called the Senator to account because he had not brought it to their attention in time for them to oppose its passage. The Senator replied to their complaint by telling them of the thousands of bills pending before Congress and showing the utter unreasonableness of their complaint, advising them to take some measure for keeping watch upon congressional legislation. That advice hits at the very essential of the vigilance that should be employed by the oil industry in caring for its interests today.

As the education and guidance of a child should be begun at birth so should legislation be looked after from the moment of its initiation in the form of a newly introduced bill. It should be borne in mind that not one bill in a hundred introduced in Congress has been prepared as a result of the knowledge and purpose of the member introducing it. They have generally been prepared by organizations or men representing some faction of an industry or entirely outside of it and in opposition to it. It would not be humanly possible to have this legislative work done otherwise. The member of Congress really considers a bill as a form of petition and he knows that the United States Constitution guarantees to every citizen the right to petition Congress. He introduces any bill that is brought to him and only occasionally, when on its face it shows a departure from the realm of reason, does he write upon it "By request," which is put there as an indication that it does not have his approval and that in fact he knows nothing about it. Throughout the country a bill is erroneously looked

(Continued on Page 70)

MANUFACTURERS' CENSUS BLANKS GO OUT FIRST WEEK IN JANUARY

By Charles E. Kern

WASHINGTON, D. C., Dec. 10.—The United States Census Bureau has all blanks for taking the census of petroleum and natural gas, together with related industries, such as oil well machinery, cordage and twine, Fuller's earth, explosives, chemicals, etc., ready for distribution on January 2, so that the blanks will be received by the industry everywhere in the United States by January 8. This census relates solely to manufactures and does not include the producing industry, a census of which is taken only every 10 years.

The questionnaire prepared for this census is identical with that of last year. After consultation with the industry the petroleum questionnaire was revised very thoroughly for the census of 1913 and the schedule was revised again in 1919 and 1921, but so far as now known it fully meets the entire approval of the industry and will require for next year no change whatever.

The Bureau has so arranged the handling of petroleum manufacturing statistics that after the last questionnaire has been received in Washington only 10 days is required to compile the information and to have it in the mails. All of the balance of the time from the date of sending out the questionnaire until the report is completed is taken up by the industry in making returns. The experience has been that six or seven months are required by the industry to get these returns to Washington. Whenever criticisms are made of the ancient nature of census returns the Bureau feels that reform is entirely in the hands of the industry itself.

Includes Refining

This report will embody the refining of petroleum, which is a part of the census of manufactures. However, all kindred subjects that have to do with petroleum are covered at the same time in questionnaires that go to various industries that produce articles largely used in the refining and production of petroleum.

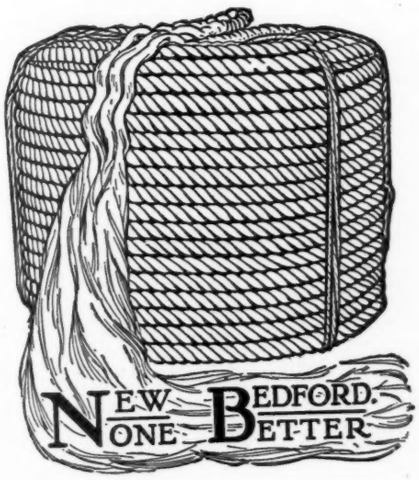
If any refiner feels any hesitation about promptly making his return for the Census Bureau (for they will not exactly coincide) with the returns he sends to the Bureau of Internal Revenue as a basis of his income tax, he should bear in mind that no one ever expects these two classes of returns, compiled at different times to correspond exactly and also that the census returns are confidential and are not available to the Bureau of Internal Revenue for comparison. It has happened that some people have not been aware of the law in its bearing upon the confidential nature of these returns and they have held back the census returns until they completed their returns to the Bureau of Internal Revenue so that there might be no failure of the two to conform exactly. With this explanation it is seen that there is no necessity to delay answering the Census Bureau question-

Eugene F. Hartley
Chief Statistician for Manufactures, United States Bureau of the Census

(Continued on Page 70)

NEW BEDFORD
Manila Products

Drilling Cables | **Bull Ropes** | **Torpedo Lines** | **Plain Laid Rope**



MANUFACTURED BY

NEW BEDFORD CORDAGE CO.

ESTABLISHED 1842

General Offices: 120 BROADWAY, NEW YORK CITY

Mills: NEW BEDFORD MASS.

NATURAL GAS DEVELOPMENTS

Geologist Estimates Wellington Structure 32 Billion Cubic Feet

In an address before the United Engineering Societies at Denver, Carroll H. Wegeman, chief geologist for the Midwest Refining Co., estimated that it will cost $5,000,000 to drill completely the Wellington and Fort Collins structures, Larimer County, Colorado, where the Union Oil Co. of California recently brought in an 80,000,000-foot gas well, lay a pipe line to Denver and construct the necessary booster stations. These estimates provide for a line with a capacity of 20,000,000 to 25,000,000 feet per day but does not include the cost of a right of way, a distance of 72 miles by air line.

He computed the amount of gas in the Wellington structure at 32,336,000,000 feet. Present consumption of gas in Denver is 9,000,000 feet per day, and the estimated supply is therefore ample for close to 10 years. Without knowing the rock pressure at the well, his estimate is based on the pressure of a column of water 4,300 feet in height, which would be 1,850 pounds to the inch, sand 29 feet in thickness, and available pore space in the sand of about 10 per cent of its volume. The estimate provides for removing the gas down to a pressure of 25 pounds to the square inch. Estimate of probable gas production on the Fort Collins Dome is placed at 23,944,000,000 feet or 7.3 years' supply for Denver.

Wegeman's estimate of the cost of delivering gas to Denver provides for the drilling of 25 wells at an average cost of $75,000 each to develop the 2,100 acres on the Wellington structure and 18 wells at an average cost of $83,000 to develop the 1,440 acres within the closure contour on the Fort Collins structure, provided the latter is productive of gas. He says his estimates of area and probable gas production are probably liberal, so that the result arrived at represents the maximum gas content which is available and that the gas may be less than the estimated amount is very probable.

The figures are given on the assumption that the gas will be taken to Denver but he points out that a market nearer the field may be provided in the surrounding towns and that increased demands may result from its use in the sugar factories in which event it will be poor economy to pass over adjacent markets in order to supply Denver. It is pointed out that the Fort Collins structure is 400 feet lower than the Wellington structure and operators may be dealing with such conditions as were met with in the Salt Creek and Teapot folds. He said such uncertainties should not discourage but should be considered in the laying of plans.

The estimates for both structures give a supply of gas for Denver on the present basis of consumption to last 17 years but it is pointed out that consumption probably will be doubled by the bringing in of industries and increase of population which will reduce it to eight and one-half years. While oil may be present on the flanks of the Wellington structure in the Nio-Benton sand, he does not consider it likely. That there is a possibility of finding oil in the Muddy sand 625 feet below the Nio-Benton and in the Dakota sand, 175 feet deeper should be seriously considered. He expressed little doubt that gas will be found in the Nio-Benton sand on the Fort Collins structure but this can not be determined until it is tested.

In regard to other areas he declared that to begin random drilling in a broad area like the Denver basin in an endeavor to find hidden structures below the surface would be worse than useless but he would not deny that there are one or two other small folds along the front range which may prove worthy of prospecting but that the drilling of the Wellington structure has demonstrated the presence of gas under the most likely fold which is present in that region.

NATURAL GAS GASOLINE EVAPORATION ONE OF LARGEST PREVENTABLE LOSSES

The evaporation of natural gas gasoline into the air has been one of the greatest preventable losses in oil field history. As is the case with most oil field losses, the waste can hardly be estimated, either by barrels or by money value. However, some examples may emphasize the magnitude of these losses.

The first natural gas gasoline was produced in the United States at Titusville, Pa., in 1904, when 4,000 gallons were made in one small plant. Natural gas gasoline from all other gas produced in the United States was being wasted. By 1911, 7,426,000 gallons of gasoline were obtained from 2,476,000,000 feet of natural gas; in 1921, 449,934,400 gallons of natural gas gasoline were obtained from approximately 479,618,194,000 feet.

While no accurate figures on the losses of gasoline through failure to treat natural gas are available, it is estimated that since the first natural gas gasoline was manufactured in 1904 at least 2,500,000,000 gallons of gasoline, or twice the amount actually recovered since that time, have been wasted. Moreover, it should be added that this estimate is based on the amount of natural gas gasoline recovered in 1921, which is but a part of the total amount of natural gas gasoline actually produced by wells during that year. In fact, it seems probable that from 25 to 50 per cent of the total amount of natural gas gasoline produced by wells is lost at present.

If true, this, in turn, would increase the estimated loss of 2,500,000,000 gallons since 1904 to 3,000,000,000 or 4,000,000,000 gallons, or enough to supply the United States for a year.

In 1921, about 724,52,000,000 feet of the natural gas produced was reported to the United States Geological Survey. In the same year, about 469,000,000,000 feet of natural gas was treated for gasoline. The average yield was about 1 gallon per 1,000 feet. Assuming that the other 389,000,000,000 feet of gas reported would yield only one-eighth gallon of gasoline per 1,000 feet, the loss of gasoline in 1921 would have been 48,600,000 gallons or 10 per cent of the amount recovered.

Some may argue that the 389,000,000,000 feet of gas reported as produced was very lean gas. To some extent this is true. However, the great loss in natural gas gasoline does not occur from failure to treat the gas from dry gas wells whose production may not even be reported to the Geological Survey. The principal loss occurs from failure to recover and treat the rich casing head gas from the thousands of small oil wells which produce from 700 to 2,500 feet of gas with each barrel of oil. Unless this gas is recovered and used, it will not be included in the statistics of gas production. Likewise, the gas which accompanies the oil from the many large flowing or pumping oil wells in flush fields where no gasoline plants have been installed is a source of natural gas gasoline loss.

Casing head gas from oil wells produce 0.5 to 8 gallons or more gasoline for each 1,000 feet of gas. In the Burbank Field, Oklahoma, the many large flowing wells produced during their first year enormous quantities of casing head gas which were not measured and reported, as no gasoline plant was installed for a number of months. Hewitt Field, Oklahoma, produced over 9,000,000 barrels of oil in the one and one-half years before the first casing head gasoline plant was installed. Investigation of the amount of gas produced with each barrel of oil, with tests of the richness of this gas (from 0.6 to 2.15 gallons per 1,000 feet) indicate that more than 25,000,000 gallons of gasoline were probably lost during this time from this one field alone.

El Dorado Field, Arkansas, produced about 12,000,000 barrels of oil during the first year, with at least 40,000,000,000 feet of casing head. No doubt the gasoline content of this gas was at least one-half gallon per 1,000 feet, and probably 1 gallon per 1,000 was more nearly correct, resulting in a loss of from 20,000,000 to 40,000,000 gallons of natural gas gasoline. From 15,000 to 20,000 gallons of gasoline daily were being wasted through failure to treat gas in the Deaner oil field, Oklahoma, in February, 1921.

FLAT GAS RATE SUIT

SHREVEPORT, La., Dec. 10.—The Twin City Pipe Line Co. of Fort Smith, Ark., has been sued by M. L. Chambless and other citizens of Crawford County, who ask that the company be restrained from applying new flat rates on natural gas. This company recently took over the properties of the La Salle Oil & Gas Co. and these, the petitions says, had a rate of 25 cents per 1,000 feet of gas that was fixed by the Arkansas Railroad Commission. This rate, the petitioners says, was superseded, after the sale of the properties, by a flat rate of $5 a month from October to March and $3 a month from April to September. The petitioners charge that the substitution is unlawful.

GRADY COUNTY WANTS DUNCAN MAIN EXTENDED

Gas producers in the Grady County Field are seeking to induce the Lone Star Gas Co. of Texas to extend its main from the Duncan Field to the Grady County Field in order that a better market for gas may be had and competition be provided for the Oklahoma Natural Gas Co. William Stogner, a Grady County producer, says the Oklahoma Natural is taking only about 3 per cent of the over 500,000,000 feet available in that territory, where the Lone Star is taking 25 per cent from wells in the Duncan Field.

The Oklahoma Natural increased the amount of gas from 1 per cent to 3 per cent of the well production when the consumer demand grew stronger in autumn. It continues to pay 10 cents per 1,000 feet at the well.

Three wells are being drilled in the exclusive gas area of Grady County. The Magnolia Petroleum Co. is drilling a well for oil in the southeast quarter of Section 23-4s-8w. A pipe line to the gas field is being laid by the Chickasha Gas & Electric Co., which has contracted for gas with the Little Nick Oil Co.

SEE INCREASING USE OF OIL AND GAS FUEL

Substitution of oil and gas for household heating as a permanent fuel for the future was forecast at a meeting of business men at Philadelphia, Pa. Representatives of oil producing companies, public utility concerns, insurance representatives, combustion engineers and the chamber of commerce spoke. A committee will be named to study further the possibilities of oil and gas burning equipment, that a maximum degree of safety and efficiency may be developed.

R. D. Leonard, vice president of the Atlantic Refining Co., told the conference oil burning household heat has been developed to a degree where its economy and safety cannot be questioned.

Henry L. Doherty, New York, president of the City Service Corp., said a combination of gas and oil will be the future household fuel.

Fire Marshall Elliott said he believed in the use of oil as fuel in homes, but said the public's fear of oil must be overcome before the confidence in it as a fuel substitute could be gained.

ONTARIO APPRAISAL IS RATE FIXING CASE

CHATHAM, Ont., Dec. 8.—The report of the experts appointed by the Ontario Provincial Government to conduct an audit of the books and an appraisal of the assets of the Union Natural Gas Co. of Canada, Ltd., as a basis for future rate-fixing is practically complete, and the findings of the committee will be placed at once in the hands of the interested parties. The report will be ready for distribution in about two weeks. Proofs are being supplied the solicitors for the municipalities and for the gas company for the preparation of their case to be heard by the Natural Gas Board of Reference. Following the distribution of the advance copies, the Board of Reference will hold a hearing for the purpose of fixing permanent rates for the municipalities which have not negotiated such rates with the company. The rates, when fixed, will be retroactive to May 1, 1923.

CARBON BLACK PERMIT

The Oklahoma Corporation Commission has granted a permit to O. W. Terrell of Tulsa to use 25 per cent of the gas being produced by wells in Coal County for the manufacture of carbon black. The output of the wells is estimated at 2,500,000 feet of gas daily. They are a long way from a pipe line and the producers had no market for the gas. This situation caused the commission to abandon its policy of refusing permits for the manufacture of carbon black.

GOOD WEST VIRGINIA GASSER

MORGANTOWN, W. Va., Dec. 10.—A gas well, 97 feet down flowing more than 4,000,000 feet a day, has been brought in in the 100-foot field near Mount Morris, Pa., by the Shannon Creek Oil Co., it has been announced. More than a score of shallow wells have been brought in at an average depth of 100 feet.

SPRING HILL-SAREPTA FIELD

In the article on the Spring Hill-Sarepta, Louisiana, gas field by George Belchic and C. A. Breitung of Shreveport, La., published November 22, acknowledgement to the Bulletin of the American Association of Petroleum Geologists was inadvertently omitted.

Reid Pumping Powers on Your Oil Lease Assure Steady Operation

THE REID TWO ECCENTRIC GEARED POWER here illustrated is a massive and strong machine designed and built for heavy loads and continuous service.

It is very generally used throughout the oil fields and has been for over twenty years. The test it has been put to in daily service in the fields has proven its superiority.

JOSEPH REID GAS ENGINE COMPANY, Oil City, Pennsylvania, U.S.A.

Branches and Agencies: Marietta, Ohio; Logan, Ohio; Newark, Ohio; Fort Recovery, Ohio; Haynesville, La.; Shreveport, La.; Charleston, W. Va.; R. B. Moore, Bolivar, N. Y.; Bradford Supply Co., Robinson, Ill.; Frick & Lindsay Co., Kentucky Distributors; S. R. Shoup, 708 Pacific Electric Bldg., Los Angeles, Calif., Oklahoma, Kansas, Texas, Arkansas and Wyoming; Frick-Reid Supply Co., Tulsa, Okla., and Branches. Branch Shop: Tulsa, Okla.

BRANCH SHOP: TULSA, OKLAHOMA

"The Valve With a Leg to Stand On"

Any Size = Any Pressure

Good Pipe Line Construction Includes Westcott Valves

Manufactured By **Westcott Valve Company, Inc.** Seneca Falls N. Y.

MEN KNOWN IN OILDOM

J. A. Brown

Among the men who have made petroleum history in Mexico, none is better known that J. A. Brown, vice president and general manager of the Transcontinental Petroleum Company, the Standard Oil Company of New Jersey's subsidiary in Mexico.

Mr. Brown was born July 28, 1885, in Hampton, Pa., and is a graduate of Girard College, one of America's historical institutions of learning. March, 1911, found him with the Continental Petroleum Company at Coalinga and Taft, Cal., where he served as secretary and treasurer for one year and then as manager. Soon, however, he was called to the New York office of the Consolidated Goldfields of South Africa, Ltd., to take a position on that company's general staff. In that capacity, he was in charge of all of the firm's American and Mexican investments, among which was the control of the then Transcontinental Petroleum Company, the Vera Cruz Mexican Oil Syndicate and a minority interest in the International Petroleum Company.

At that time, these companies were known in Mexico as the Mestres promotions. Mr. Brown was in California managing temporarily a potash business for the Consolidated Goldfields, Ltd., when R. A. Mestres died in April of 1917, and he was called to New York to look after the oil interests of Mr. Mestres and to conclude the sale of these interests to the Standard of New Jersey. In December, 1917, when the deal was finally concluded, he was invited to join the Standard of New Jersey and went to Mexico first as the head of the company's land department, later being appointed vice president and general manager, a position which he has ably filled.

PERSONAL PARAGRAPHS

Sam Donald has left for the Burmah fields after spending four months at his home at Oil Springs, Ont.

• • •

P. J. Shouvlin of the Superior Gas Engine Company, of Springfield, Mass., was a Tulsa visitor last week.

• • •

Christie Payne, with headquarters at No. 26 Broadway, spent a few days in Pittsburgh, Pa., last week.

• • •

Martin Moran, general manager of The Texas Company, at Tulsa, spent several days last week in Okmulgee County.

D. E. Buchanan, sales manager of the Chestnut & Smith Corporation of Tulsa, was calling on the Chicago trade last week.

• • •

Howard R. Hughes, of the Hughes Tool Company, is in Houston after an extended absence in California and New York City.

• • •

W. L. Connelly of Casper, Wyo., vice president and general manager of the Mammoth Oil Company is in New York City on business.

• • •

George D. Locke, vice president of the Barnsdall Refining Company, Chicago, has returned from a trip to Tulsa and the Southwest.

• • •

C. L. Maguire, of the Maguire Petroleum Corporation, Chicago, has been in Franklin, Pa., recently where the concern's refinery is located.

• • •

A. G. Dana, vice president of the Kasoming Oil Company, has returned to his home in Cheyenne, Wyo., after a brief business trip to Casper.

• • •

Charles E. Kelly, who recently organized the American Mineral Spirits Company, Chicago, reports a good business in specialty naphthas.

• • •

H. J. Lawler, head of the land and lease department of the Skelly Oil Company, Tulsa, returned last week from a trip through the Texas fields.

• • •

W. S. White, general manager of the Hillside Oil, Gas & Coal Company, has returned to his home in Muskogee, Okla., after a two-weeks' stay in Chicago.

• • •

W. C. Meeks, general sales manager of the Bridgeport Machine Company of Wichita, Kans., spent several days last week in the Tulsa office of the company.

• • •

R. H. Lee, of the Charles N. Hough Manufacturing Company of Franklin, Pa., is touring the Coastal pools and southwest fields in the interest of his company.

• • •

John M. Carson, president of the Taxman Refining Company, Chicago, has returned after conferring with the officers of Cosden & Company in Tulsa last week.

• • •

I. N. Clay, independent oil operator, has returned to Casper, Wyo., from an extended business trip through the East in which he visited New York, Boston and Chicago.

• • •

Forrest M. Towl, president of the Southern Pipe Line Group, was a Pittsburgh, Pa., visitor last Friday. Mr. Towl expressed the opinion that conditions were slightly improved.

• • •

R. L. Thatcher of the Atlas Oil Company of California, returned to Casper, Wyo., after a visit to that State. Mr. Thatcher is interested in oil properties in Converse County, Wyoming.

• • •

J. L. Dowling, vice president and general manager of the Texas Pipe Line Company, accompanied by his family, has returned to Houston, Texas, after a three month's tour of Europe and the British Isles.

• • •

William Kammerer, for many years field superintendent of the Amalgamated Oil Company, is now in charge of all operations of the Holly Oil Company, and the Holly Development Company, at Huntington Beach, Cal.

• • •

J. A. Halpine, of the Rig Equipment Company, Sand Springs, Okla., visited the Coastal region during the week, driving overland from the Powell and Mexia fields. It was Mr. Halpine's initial trip to the Texas fields.

• • •

H. F. Montgomery has resigned the presidency of the Crown Oil & Refining Company, a subsidiary of the White Oil Corporation, and will resume the practice of law in Houston. His resignation becomes effective January 1.

• • •

Jo Cappeau, of Pittsburgh, Pa., was a recent Houston, Texas, visitor and met a number of friends who knew him during the early days of the industry when he was one of the noted scouts in the Bradford and other fields.

• • •

L. V. Nicholas, president of the National Petroleum Marketers Association, is again in his Chicago office, after having aided in the organization of the Texas Independent Oil Men's Association at Fort Worth, Texas, recently.

• • •

S. R. Scivally, in charge of the Tulsa office of the Sinclair Refining Company, is much improved in health and will be able to return to his office within a few days. Mr. Scivally has been spending several weeks at Hot Springs, Ark.

• • •

John Considine and James Connolly, of the Petroleum Iron Works, Sharon, Pa., have been making a trip through the Texas fields, accompanied by A. M. Johnson, of Houston, vice president and general manager of the southwestern division.

• • •

Frank Collins of the National Supply Company, Toledo, Ohio, and Mrs. Collins, accompanied by Mr. and Mrs. O. G. King, Mr. and Mrs. Thomas Bentley and Lewis Bentley, all of Toledo, Ohio, are spending a short time at Mr. Collins' camp in northern Michigan.

• • •

Mr. and Mrs. Clyde Van Vleck, of Toledo, Ohio, are making preparations to start within a few days for Fort Myer, Fla., where they will spend the winter season. While Mr. Van Vleck is an old-time oil operator, he is an enthusiastic yachtsman and fisherman.

• • •

W. H. Elliott of Tulsa, special representative of Black, Sivalls & Bryson, manufacturers of Perfection Vapor Pressure tanks, has been in Casper, Wyo., for some time, calling on the trade in company with W. H. Price. Rocky Mountain representative of the company.

• • •

G. A. R. Slocum, sales manager of the Skelly Oil Company, spent several days last week at the Tulsa offices of the company. Mr. Slocum is very optimistic regarding the refined market situation. He believes that a permanent price development in practically all refined products is assured.

• • •

Philip Remi, Julius Priester and Dr. Charles Heller, officers of the Galician Oil Company, of Paris and Vienna, have inspected the Gulf Coast pools and refineries, accompanied by R. S. Sterling, chairman of the board of directors of the Humble Oil & Refining Company, Houston, Texas.

• • •

A farewell dinner in honor of Ernest R. Ratcliffe, retiring head of the Louisiana Oil Refining Corporation and the Invincible Oil Corporation, was given at the Youree in Shreveport, La., last week and was attended by 50 of the company's department heads and assistants. Mr. Ratcliffe is succeeded by R. B. Kahle.

• • •

R. G. Jennings, vice president of the Kanawha Oil Company, the Pittsburgh Oil & Gas Company, the Manatee Land Improvement Company, and president of the Pennhoma Oil Company, has been elected president of the Columbia National Bank of Pittsburgh, Pa., to fill the vacancy created by the death of his father, the late E. H. Jennings.

• • •

A large number of Canadian drillers have been signed up by W. W. McRae, Canadian representative of the Royal Dutch-Shell Company to drill in South America on a 3-year contract, and are now waiting for their passports. The list includes John Brooks and James Stevens, Sarnia, Ont.; Alfred Brownlee, Wyoming, Ont.; Morley Evoy, Roland Blackwell, George Peat, Orville Wolsey, Richard McCort, W. Rawson, Jr., Henry Gregory and William Kay of Oil Springs, Ont. All have had previous experience in foreign lands, Brooks having been in Borneo, Sumatra, Egypt and South America; Stevens in Trinidad and West Africa; Rawson in California; Gregory in Trinidad and Venezuela; Evoy in Persia; McCort in Burmah and Mexico; Blackwell in Africa and South America; Brownlee in Sarawak; Peat in Egypt and Trinidad; Wolsey in South America, and Kay in India.

Pennsylvania Grade

The top quality oil of all the world
For the Trade that Insists on the Best

The rising flood of oil on the market today has not been able to obscure the recognized superiority of Pennsylvania Grade Lubricants.

People who have invested money in fine cars realize the importance from an investment standpoint of using the best grade of oil. Farmers find the difficult job of tractor lubrication greatly simplified by Pennsylvania grade oils. Industrial users, also, judge any lubricant by the Pennsylvania standard.

PENN AMERICAN

dependable Pennsylvania products

satisfy the cream of the market--the people who want the best and are willing to pay a fair price for it.

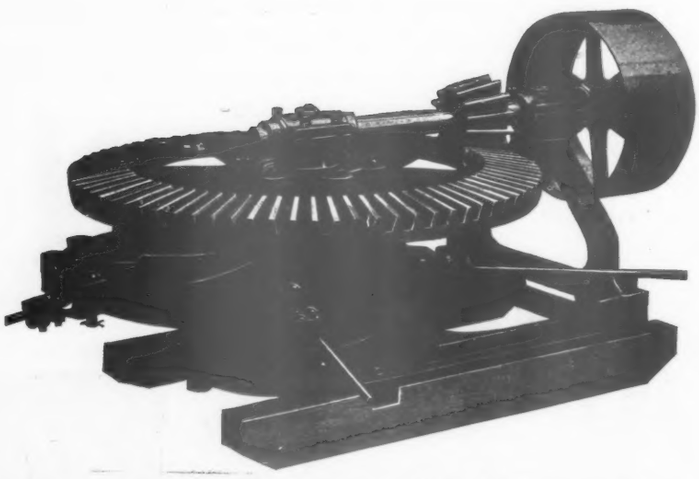
These superfine petroleum products have been produced in our own refineries exclusively for the past thirty-seven years. And barring earthquakes, floods or other acts of Divine Providence, they will be similarly produced in unvarying quality for the next thirty-seven years.

PENN AMERICAN REFINING CO.
Refiners of Pennsylvania Petroleum
Home Office, Oil City, Pa.—**Refineries,** Oil City and Rouseville, Pa.
Established 1886

Tips from an Old-Timer

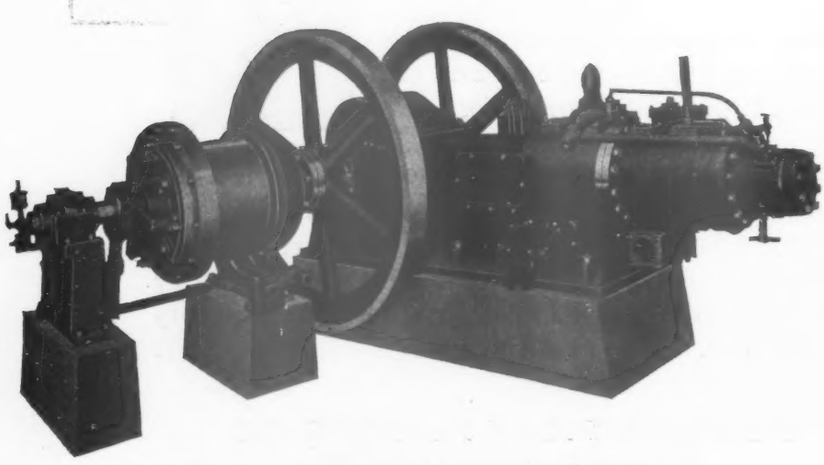
buy my pet brand of cigar because they don' vary and are always worth what I pay for them. I've found that my customers buy oil the same way.

National Pump



No. 6 National Geared Single Eccentric
Under Pull Pumping Power

No. 12-C National Wh



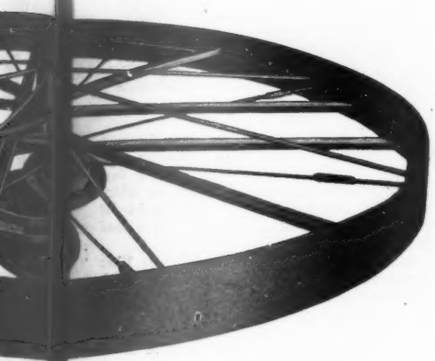
Type PS Superior Oil Engine

Comple
equipm
for an c

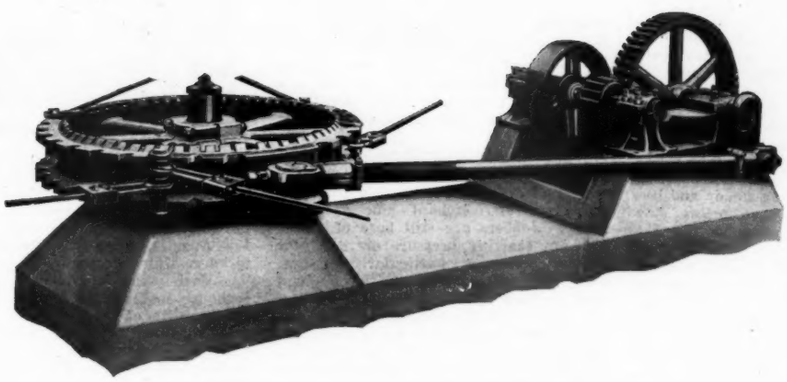
NSCO

THE NATIONAL S

ing Equipment

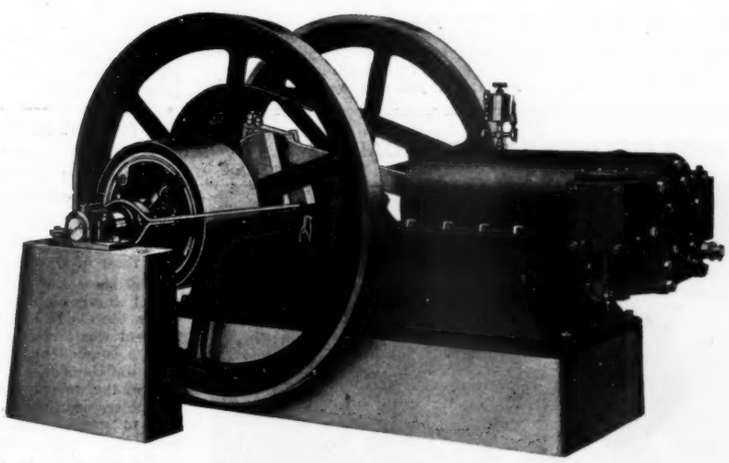


onal Wheel Power



National Push and Pull Pumping Power

ple pumping
pment suitable
n condition

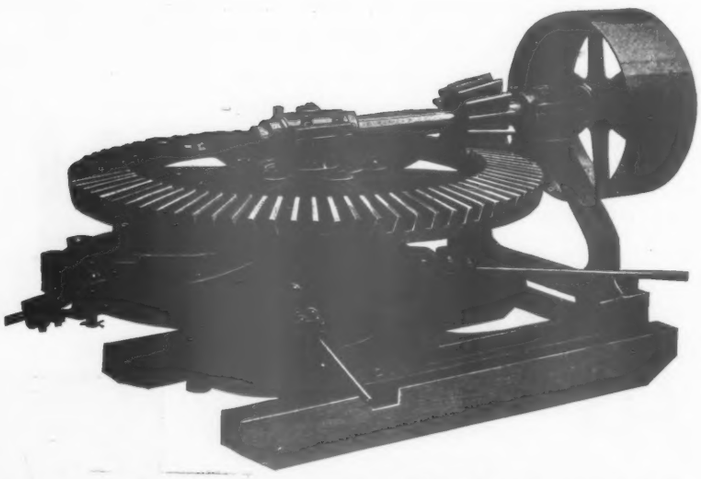


Superior Oil Country Type Gas Engine

S)PPLY COMPANIES

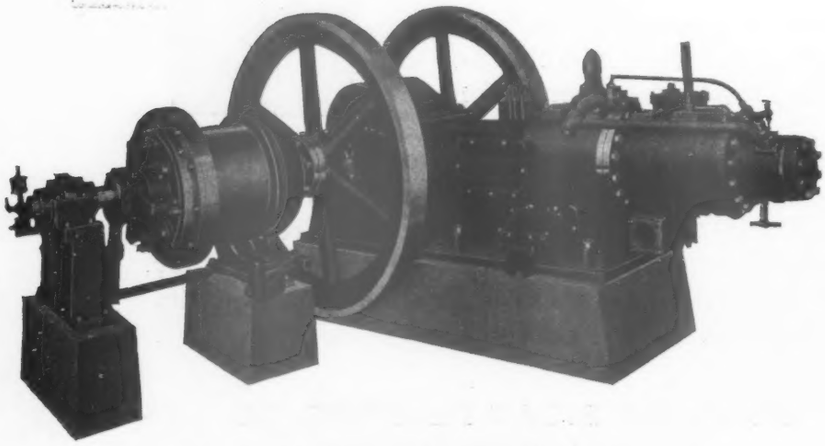
NSCO

National Pump



No. 6 National Geared Single Eccentric Under Pull Pumping Power

No. 12-C National



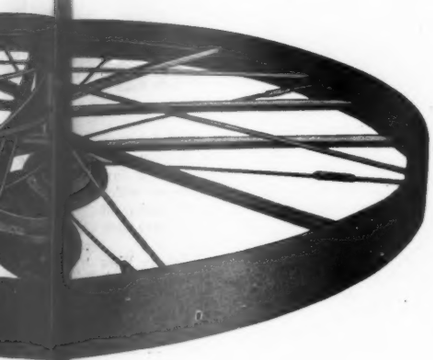
Type PS Superior Oil Engine

Comple
equipm
for an

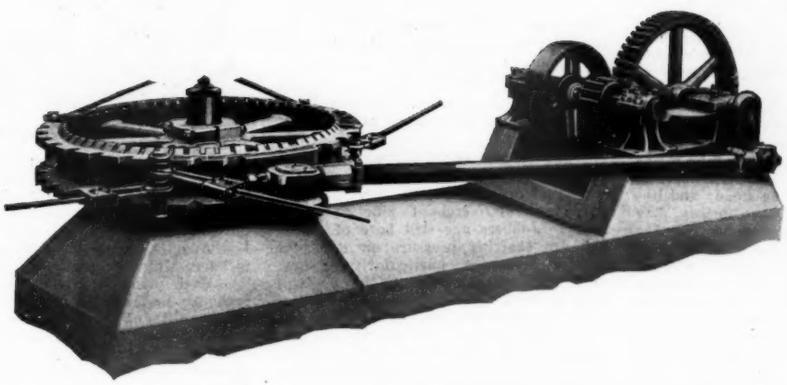
NSCO

THE NATIONAL S

ing Equipment

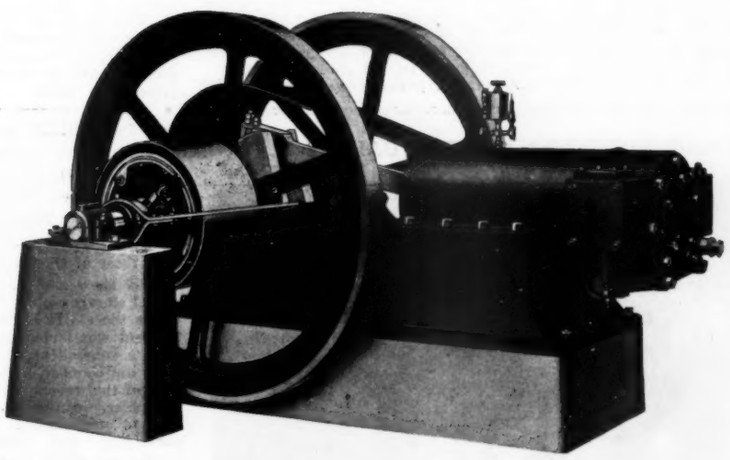


onal Wheel Power



National Push and Pull Pumping Power

ple pumping
pment suitable
an condition



Superior Oil Country Type Gas Engine

SUPPLY COMPANIES

NSCO

EQUIPMENT AND SUPPLIES

STEEL MARKET CONTINUING TO SHOW BETTER TONE; GOOD YEAR EXPECTED

By B. E. V. Luty

PITTSBURGH, Pa., Dec. 10.—Operations in the steel industry, taking the mills as a whole, continue to show a declining tendency, but the decline is slow. There will probably be a sharper decrease as the end of the year is reached, but this would be purely seasonal. Operations at tin plate mills show no decrease, and there is little, if any at pipe mills. The chief lines in which output is decreasing are bars, shapes and plates.

On the basis of estimated capacity, representing a tonnage that never has actually been reached, steel production at the high point was at 93 or 94 per cent; in September and October it was at about 78 per cent, and now it is at about 72 per cent, with the Steel Corporation running at several points above this and the independents at several points below.

Week by week for three or four weeks past the steel market has been showing a better tone, prices being steady and less uneasiness being felt that prices may break. The uncertain point in the market has been in the heavy rolled products, bars, shapes, and plates, demand for them being lighter than demand for other products, while most observers claim that bars, shapes and plates were shoved up more, in the advance of last year and the first four months of this year, than the other products, so that, relatively speaking, they are high. However, they are still holding fairly well, there being simply a little shading in the east of the Pittsburgh basis.

The general feeling in the steel market is helped by various sentimental influences. No increase in orders results from this, but the chances of there being some forward buying are improved. One favorable influence is the recent buying movement in foundry pig iron, which arrested the protracted decline, amounting to about $10 a ton, and even caused prices to turn upwards about $1 a ton on an average. Another favorable influence is the upturn in the scrap market, which likewise had been declining in rather radical fashion. Heavy melting steel scrap, after declining about $12 a ton from late in March to late in October, is up again by $2.50. Then there are the various evidences of continued industrial activity in general, indicating that consumption of steel is still proceeding at a high rate.

The pipe mills are still well fixed for operation. While one independent does not seem to be running at over about 65 per cent, and another is at about 75 per cent, other independent pipe mills as well as the Steel Corporation pipe subsidiary, are running at between 85 and 100 per cent.

While shipments of oil country goods have been decreasing for a long time, they still represent a pretty fair tonnage. Shipments of merchant pipe are very heavy. Jobbers are still bare of stocks and are exerting pressure on mills for heavier deliveries, particularly of butt weld sizes. Presumably the jobbers will wish to build up stocks to normal whenever they have the opportunity, and the mills themselves wish to accumulate normal stocks, so that nearly full operation of pipe mills for several months to come is fairly well assured.

The pipe mills are satisfied that the worst in the oil situation was passed some time ago and have come to the conclusion that conditions will be fully righted in the near future, hence they expect a practically normal demand for oil country tubular goods in 1924, taking the year as a whole.

No oil tank buying is reported this week, and activity in that direction has been light for two or three months.

A total of probably well over 500,000 boxes of tin plate business has been done in the past six weeks with oil companies, for making cans for exporting oil, while lately the Standard Oil Co. has been in the market for tin plate for export to its operations in Japan. The tin plate market is very firm, the domestic price being $5.50.

CENTRIFUGAL ELECTRIC OIL PUMPS SATISFACTORY

Installation of Centrifugal Pumps for Pumping Oil

Three centrifugal electric oil pumps, the first of that type ever used for such service, have been installed by the Petroleum Midway Oil Co. at its Watson tank farm near Los Angeles, Calif. The pumps will handle 67,200 bbls. of oil a day, with two pumps in operation and the third kept as a spare. The lines on which the pumps are installed carry crude oil from the Watson farm to the harbor of Los Angeles, where it is loaded into Standard Oil tankers. The pumps have been in successful operation since September 29.

Each pump is driven by a 200 horse power 4-pole, 1,450 rpm., 50-cycle Westinghouse motor. By means of an arrangement with which each pump is fitted, the quantity of the oil at the intake can be regulated and the pressure in the pipe line controlled without changing the speed of the pumps. Since the pumps are operated in series, the pressure in the line is equal to the total of that of the two pumps, and because of their steady operation, the pressure does not vary in heavy beats as with reciprocating pumps, which must reduce the pressure to zero at each stroke. The three pumps installed take up only as much space as one steam pump. Only one man is needed for the operation of the installation.

GUIBERSON FIELD MEN MEET AT DALLAS

The above protograph was taken during the annual meeting of field representatives of the Guiberson Corp., at the company's plant, Dallas, Texas. All of the important oil districts in the United States were represented at the meeting, though not all the company's field staff could be present.

Left to right those shown are: Standing—W. E. King, J. D. Hochenauer, R. C. Gano, G. D. Hall, N. G. Guiberson, J. B. Henderson, M. P. Kapelle, Miss Blanche Denson, H. M. Haseltine, Miss L. B. Cummins, C. S. Crickmer, Miss Wilma Nelms. Mrs. M. J. Kaough, J. W. Bowen, Mrs. Ottsie Halem, R. E. Harris, C. G. Smith, R. S. Haseltine, A. B. Stilwell, R. A. Wilson. Seated—F. C. Pettitt, R. D. Wallis, C. E. Frazier, D. W. Henke, J. L. Leslie, L. C. Wigton, J. W. Kaough.

PAMPHLET ON WELDING

A pamphlet recently issued by the Gibb Instrument Co., of Bay City, Mich., makers of the Zeus arc welder, tells of the numerous advantages of welded tanks over those of riveted construction. Photographs show the erection of an 80,000-barrel storage tank on an Oklahoma lease where the entire bottom, with a span of 117 feet was laid directly on the ground, with a consequent considerable saving in time and lumber. An additional advantage of the welded tanks, according to the pamphlet, is the elimination of losses due to evaporation from leaks. The portability and speed of the Zeus welder are given as distinct advantages in the construction of tanks.

BOOKLET ON FIRE PREVENTION

A new 16-page booklet, "The Essentials of Self Protection Against Fire," has just been published by the Foamite-Childs Corp., for protection engineers and manufacturers of all kinds of fire fighting devices at Utica, N. Y.

The booklet is well illustrated and contains a large chart with a complete tabulation of the characteristics of all types of chemical fire extinguishers. It discusses the characteristics of extinguishing agents, the quantity which should be used and the method of operation which should be employed, and also contains information on other important phases of fire fighting problems.

OLDEST TANK BUILDER

John Schnabel

"The Oldest Tank Builder in the World" is the distinction claimed for John Schnabel, an employe of the Petroleum Iron Works Co. of Sharon, Pa. He is still on the job after passing his allotted three score and ten, and after devoting more than 47 years of continuous service to the building of tanks, the last 30 years of which have been spent with the Petroleum Iron Works Co.

Mr. Schnabel was born in Damstead, Germany, May 29, 1851. He started tank building in Bradford, Pa., in 1876, and joined the Petroleum Iron Works Co. when it was first organized.

THERE is not a producing oil property, oil firm or individual of importance in the Mid-Continent oil industry about which information is not at the fingertips of the Exchange Banks of Tulsa. The personal knowledge of eighteen directors who are largely practical oil men themselves, combined with a vast system of files kept religiously up-to-the-minute, provide a source of credit information almost uncanny. A great majority of the important firms or individuals of the Mid-Continent fields are our depositors. They find it a distinct advantage since reports in which the personal equation enters ofttimes carry weight that a mere, cold-figure statement cannot.

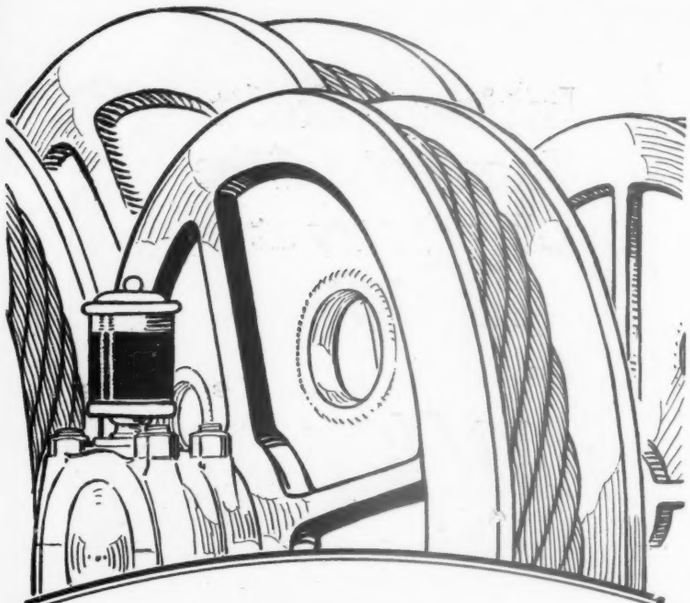
DIRECTORATE

E. W. Sinclair — R. P. Brewer
W. A. Brownlee — Jno. Y. Murry
J. A. Chapman — R. M. McFarlin
J. H. Evans — J. J. McGraw
J. H. Markham, Jr. — Frank Haskell
A. T. Alison — J. J. Larkin
H. H. Rogers — D. H. Kelsey
J. A. Hull — H. F. Sinclair
H. G. Barnard

EXCHANGE BANKS OF TULSA

The Exchange National Bank — Exchange Trust Company

Combined Resources Exceed Forty Million Dollars—



When Your Casing "Freezes"

attach a Yellow Strand Rotary Casing Line and start the engine. See the line stretch. And *stretch.* And STRETCH.

Will she snap? No. She'll tug till the casing comes loose, and spring back to form like the "live wire" that she is.

This power to stretch and recover is what makes Yellow Strand supreme for working casing that sticks. Bending puts no undue strain on this extraordinary casing line. Gives you your money's worth in *results.*

Ask for CatalogK-2

BRODERICK & BASCOM ROPE CO., St Louis, Mo.
Branches: **New York and Seattle**
Factories: **St. Louis and Seattle**

G 258

Yellow Strand Rotary Casing Lines

IRON AND STEEL PROBELMS OUTLINED BY BUREAU OF MINES METALLURGIST

By Francis B. Foley
Metallurgist, Bureau of Mines
Presented at Group Session on Standardization of Oil Drilling Methods, December 12, Fourth Annual Meeting, American Petroleum Institute

For some time past the Bureau of Mines has been interested in the quality and performance of rock drill steel used mostly in metal mining. It was natural that this interest should broaden so as to take in steels used in oil well drilling.

Just as the automobile engineers found that they could not throw all the responsibility on the steel manufacturer to supply the correct material in the proper condition for various parts and had to educate themselves and finally carry on their own metallographic research with the results that they now specify their materials and treat them themselves, so the petroleum engineers, if they are to get the maximum satisfaction out of the equipment they are using, ultimately will have to learn something concerning what is and what is not good steel and what should and should not be done in heat treating and forging steel. We cannot expect the steel manufacturer to know the ins and outs of the petroleum industry as well as the petroleum engineer does, any more than we can expect the petroleum engineer to know all the ins and outs of steel manufacture. Each, however, must know sufficient of the other business to be of mutual benefit. The steel man must know what kind of oil to use and how to use it properly, and the oil man ought to know what steel he wants and how to use it properly.

Results of Disregard of Quality.

Three incidents will serve very well to show what the oil producer brings on himself by his causal disregard of quality in the steel which he buys.

The first of these is a broken latch which failed suddenly while a pair of pipe tongs were under their highest stress. The tongs of course flew off the pipe and fortunately a man who was struck on the leg was not seriously injured.

The second is a pin, again from a pair of tongs. This pin was put in place of one that had bent and before the tongs were fully tightened for the first time it snapped in two.

The third is a case hardened roller from a roller chain used on a rotary rig. In the broken pieces of steel lying around the floor of a rotary rig, pieces of roller chain seem to predominate. The core of one of these was picked up at random. Metallographically, the piece is in abominable shape. It has apparently been overheated during carbonizing, quenched from the high temperature and not heat treated at all afterwards. The case is made up of needle-like ferrite, martensite and troostite, the products of a sudden cooling from above the critical range. The acicular form of the ferrite and that of the core show that the cooling was from considerably above the critical temperature.

Good Metallographic Practice

Ordinary regard for good metallographic practice would prevent any of the above conditions. Good oil well drilling equipment is made. The writer has seen it made and knows that none of the members of the above chamber of horrors come from a plant where there was careful supervision of the various steps in fabricating and heat treating. What the oil producer needs is to find out how much intelligence the seller is putting into the manufacture of his product and buy accordingly.

Another method would be to draw up specifications which would necessitate a force of inspectors to see that the specifications were lived up to. It would be costly and after all not accomplish any more than the first method.

As concerns the manufacturing of oil well drilling supplies, one sees little evidence of anything of the nature of a serious problem, seldom anything involving more than an intelligent application of the principles of metallurgy and metallography. Needless to say, these principles are easier to put into practice in well equipped, clean shops, and shops producing oil well supplies range between the poorest equipped and dirtiest, to the best equipped and cleanest, and a wide range in quality of the materials produced is inevitable.

Some tools, notably bits, require forging and heat treating in the field. Where this kind of work has to be done in temporary shops by free lance workmen the conditions border on the impossible. Few of the facilities available in the permanent plant can be economically installed in these temporary shops. The furnaces particularly are quite crude. A fortunate condition exists in large fields where the larger producers have big holdings and have installed permanent central shops where bits are forged and tempered under the supervision usually of careful, skillful foremen.

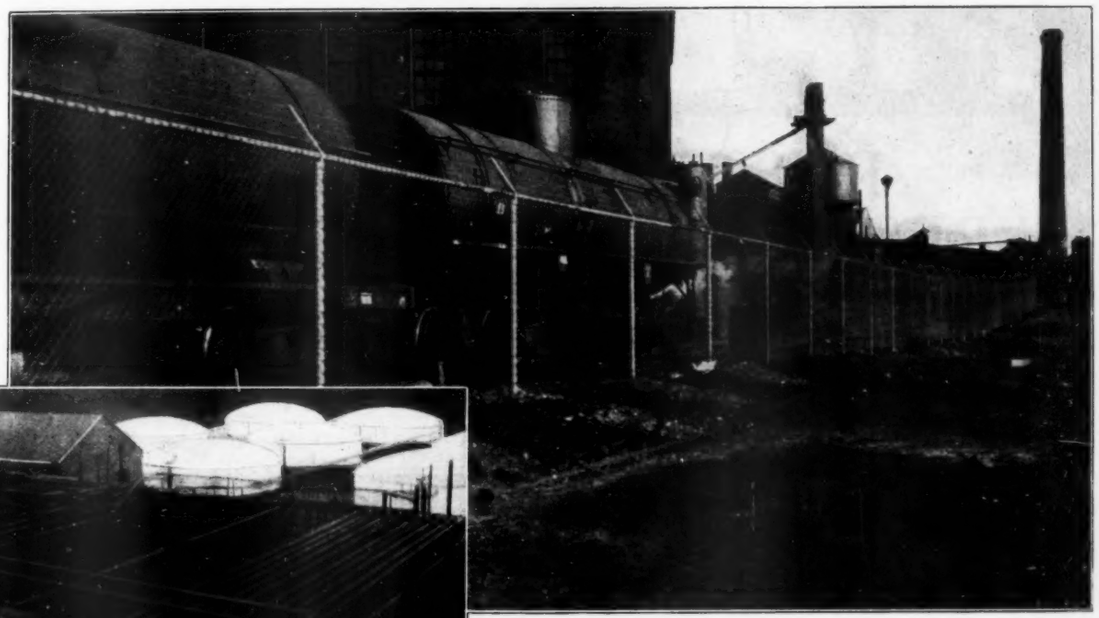
Manufacturing of Supplies

Bits used in oil well drilling are large and the very large cable tool bits have considerable mass. Even in a well-equipped shop such masses of steel would get great care from skilled working in heating and forging. The heat is under good control and that is essential. There is great danger in heating large masses of quickly attaining a high temperature on the surface of the metal while the center of the mass is at a considerably lower temperature. This often causes the metal to crack and gives a poor forging job. Another great danger comes from decarburizing the surface of the steel. This is caused by using an excess of air with the fuel; the excess air combining with the carbon in the steel and removing it as a gas, leaving behind carbonless iron over the surface of the metal, which it is impossible to harden in subsequently treating the bit. This decarburization goes on much more rapidly at high temperatures and is almost inevitably present in steel which has been subjected to too high a temperature, either for forging or hardening. Some degree of decarburization is almost certain in the types of furnaces used by the field tool dressers. If there is total decarburization of the surface metal so that nothing remains but a skin of practically pure iron, the steel will not harden at all. If the decarburization has not been so severe so that there is only a reduction in the amount of carbon in the surface metal, then it may be possible to harden the metal, but the quench must be from a higher temperature than that which would suffice under normal conditions to produce hardness. Probably it is this which accounts for the great tendency to use high temperatures for hardening, a practice which is to be deplored because, while the temperature used might not adversely affect the skin of the steel it is often far too high a temperature for the metal beneath, which is of higher carbon. Quenching from too high a temperature produces a brittle steel.

A lead bath has been used with considerable success in hardening 6-inch cable tool bits. The temperature of the lead can be closely regulated by using a pyrometer. The tool is suspended from a cantilever arm over the pot with just the proper amount, say two inches, of the bit immersed in the lead. The arm carrying the tool can be swung so as to carry the tool over a bath of agitated water in which the tool is quenched. If the bit is quenched dead cold it will be too brittle, so that chipping results and to prevent this the time of immersion in the water can be 20 to 30 seconds so that the bit comes out warm enough and the heat in the portion which has not been in the water runs down into the tip and draws the temper at the edge. Another method of preventing the chipping which is equally successful but

(Continued on Page 97)

NO WONDER THE PETROLEUM INDUSTRY CHOOSES *PAGE-ARMCO* FENCE



THE NATIONAL REFINING CO.
COFFEYVILLE, KAN.

June 22, 1922

Monongahela Tube Co.
Pittsburgh, Pa.

Gentlemen:

In June, 1915, we equipped our No. 4 condenser box with ARMCO Pipe. This box has been in continuous service up to the present time, making two runs per day.

In June, 1918, the three top rows of ARMCO Pipe were replaced with steel pipe. Six months later the steel pipe was replaced. In another half year the entire coil was removed and some of the original ARMCO Pipe was still serviceable.

THE NATIONAL REFINING CO.
(Signed) H. B. SETZLER
Superintendent

SIX times the life of steel---that's the record of ARMCO Ingot Iron Pipe in condenser boxes of the National Refining Co.

So when the Union Petroleum Co., of Westwego, La., bought a fence to protect their property, they chose Page-Armco, because it was the only fence to be had of ARMCO Ingot Iron, the most uniformly durable material used for woven wire fencing.

Tests indicate that Page-Armco fence, like ARMCO Pipe, will outlast several installations of steel fence. Write for illustrated catalog showing typical examples of property protection.

In each of the cities listed there is a Page Distributor that carries complete stocks of Page Products and will give prompt estimates and efficient service in construction.

Alabama Birmingham	**Indiana** Indianapolis	**Missouri** Kansas City St. Louis	**Oregon** Medford
California Los Angeles	**Kentucky** Louisville	**New York** Binghamton Buffalo New York City Rensselaer	**Pennsylvania** Philadelphia Pittsburgh
Connecticut New Haven	**Louisiana** New Orleans		**S. Carolina** Charleston
Colorado Denver	**Maryland** Baltimore	**N. Carolina** Charlotte	**Tennessee** Chattanooga Memphis
Florida St. Petersburg	**Massachusetts** Boston Springfield	**Ohio** Ashville Cincinnati Zanesville	**Virginia** Lynchburg Richmond
Georgia Atlanta Savannah	**Michigan** Detroit	**Oklahoma** Tulsa	**Wisconsin** Milwaukee
Illinois Chicago	**Minnesota** Minneapolis		

IN CANADA: Dominion Chain Company, Niagara Falls, Ont., with distributors in London, Ont.; Montreal, Que.; St. Johns, N. B.; Winnipeg, Man.

Address Page Fence and Wire Products Assn. at the city nearest you or write the main office: PAGE FENCE AND WIRE PRODUCTS ASSN., 215 N. Michigan Ave., Chicago, Ill.

STEEL AND WIRE PAGE QUALITY PRODUCTS

"America's first wire fence~1885"

PAGE
PROTECTION FENCE

ARMCO Ingot Iron

The only wire fence made of Armco Ingot Iron

BYERS
GENUINE WROUGHT IRON
PIPE

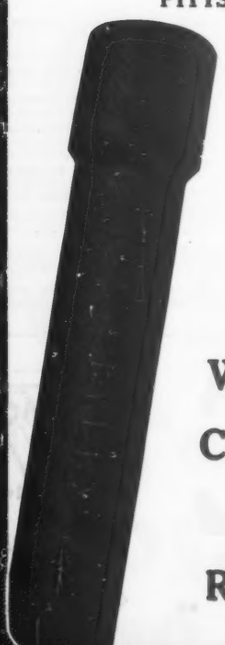
RUST-RESISTANCE

is the biggest word in pipe durability

Not long ago, the superintendent of a large gas company had occasion to pull the casing from some 8 or 10 old gas wells. In all but two of these, the casing was Byers, and was pulled without the loss of a foot of pipe. In the remaining two wells, the steel casing pulled apart repeatedly, having suffered so severely from corrosion as to be unable to stand the stress of pulling, and very little of the pipe was fit to use again.

The life of casing, line pipe, and tubing, largely depends on their rust-resistance. Byer's genuine iron pipe is known to **"wear"** better than steel pipe, largely because, after years of service, it suffers so little from rust that it retains its original physical strength and clean, accurate threads.

A. M. BYERS COMPANY
Established 1864
PITTSBURGH, PA.



Representatives:
S. D. OLIPHANT, Tulsa, Okla.
J. A. ARMSTRONG, Los Angeles, Calif.
E. A. SMALL, Jr., 1614 Carter Bldg., Houston, Texas

Genuine
Wrought Iron
Casing Tubing
Line Pipe
Refinery Pipe

BAD LEGISLATION MUST BE FOUGHT FROM START

(Continued from Page 58)

upon as representing the views of the member who introduces it.

Some of these bills are blind as to their purpose and effect. Often they are given a title merely showing that they are amendatory to some statute. The titles are seldom fully explanatory of the purpose of a bill. This renders it impossible for people at a distance to keep track of what is being introduced by consulting the Congressional Record, in which all bills are listed and numbered. In order to have any intelligent idea of what they contain printed copies of these bills must be obtained and studied. That will involve a great deal of labor. Nothing less than an organization can do that in a thorough manner. Individual efforts will reach only the high spots of legislation.

As soon as possible after a member introduces an objectionable bill, the real purposes of which are unknown to him, he should be given intelligent criticism and facts to show its unwise nature. It does no good to denounce a Congressman. That gets nowhere. To fight legislation effectively requires intelligence and sometimes diplomacy. Almost any member will refuse to back up a bill which has been explained to him as unfairly launched with hostile intent towards some industry.

The average person throughout the country is under the impression that once a bill is introduced in the Senate or House it will proceed along the legislative path as a matter of ordinary procedure. The fact is no bill moves to get consideration without pressure by the member, whether it is in sub-committee, committee or in Senate or House. There is no greased runway along which legislation once started proceeds to a conclusion. This is fortunate for those who desire to have a measure fully discussed. They can obtain hearings in which they will force the proponents of faulty legislation to show their hands. But if they remain away the faultiness of the legislation may never come to the surface, and by energetic work those who are back of it may force it along from day to day.

Not Generally Understood

All of this may appear like a kindergarten lesson in legislation, but it is surprising to find how many people understand little of the value of vigilance and intelligent opposition to hostile legislation. Of course, the big oil companies know about these things, but it is not wise for the oil industry as a whole to abandon its natural function of self protection. If for no other reason, Congress gets a very poor idea of the interests of the great industry by seeing only men identified with the big business of the industry moving about the capitol. They would be in a much better position to deal in friendliness with the industry if it were represented in all of its branches, big and little.

Above all, 115 new members of the House and 18 Senators should be got acquainted with when they are making their initial bow in Congress and when they have leisure and are really complimented by having various problems of legislation brought to them for explanation. That is the very best time to make their acquaintance. In their initial residence in Washington they should learn something about the great petroleum industry from men who are capable of representing it favorably.

A great deal is constantly said in respect to leadership in the Senate and House in the conduct of what is known as radical legislation. But it is not properly understood that behind every leadership there is a vast variety of opinion and often independence that would smash the leadership if it had facts upon which to proceed in an intelligent manner. The oil industry is entirely capable of presenting its case with such force as will command attention whenever it becomes properly organized.

CENSUS BLANKS GO OUT FIRST WEEK IN JANUARY

(Continued from Page 58)

naire before the end of January, although their tax returns may not be made until March.

Now and then someone fails to realize that the law requires these returns and is under the impression that their response is entirely a voluntary matter. That occurred at Tulsa, last year, when the official in charge of the work there called on the United States Marshal to ask that the Federal Court in that district should be utilized to bring this recalcitrant manufacturer to a proper sense of his duty under the law. The Marshal, being a practical man, suggested that he should call up the manufacturer involved and explain to him the seriousness of his refusal. Just as soon as this manufacturer realized that his refusal was a violation of the Federal law he promptly agreed to make out his returns.

It is no great secret that some time ago when the Department of Justice was earnestly seeking information about the National Biscuit Co., someone conceived the brilliant idea of going to the census office for access to the original returns made by that company to check up the extent of its business. They soon learned that if anyone had permitted them to have access to the reports of the Census Bureau they would be subjected to a fine and imprisonment. In other words, the manufacturer who reports to the Census Bureau cannot be held accountable anywhere else for the accuracy of his reports, nor can they be used elsewhere against him either by the Government or anyone else. However, that does not relieve him from responsibility toward the Census Bureau in making them correct, as the law requires him to make accurate reports.

Figures Confidential

The Census Bureau also is careful in the statement of its reports not to publish them so than anyone can even guess at the information concerning any one company reporting. An instance is had in the case of the Royal Baking Powder Co., the business of which in New York State is such that were the baking powder statistics to be published in respect to the production of that State alone anyone at all familiar with that industry could easily approximate just what the Royal Baking Powder Co. is doing. That being the case the statement is made to cover the industry or such a number of States that no one could even guess from what they show what the Royal is doing.

In cities it often happens that one industry practically covers all activity there in that one line of business and to publish the figures for the city would be to publish them for the single company. In such cases the big industry is not stated singly, but its business is included in "all other industries." For this reason if any oil refining business is so large as to be practically all of the area in which it operates its figures would be merged in a larger area and no one would ever be the wiser by reading the census reports in which their output figured.

The census covers 350 industries which are divided in 14 groups of industries. The petroleum refining industry will call for sending out about 400 questionnaires, although a vastly smaller number of independent refinery establishments exist. That is accounted for by the fact that a business is often circularized by name of the company and by name of individuals in the company, the information received clearing up all duplications which are almost always shown by replies stating that the company name and the individual name are the same in interest.

Why They Are Delayed

The larger oil companies have been accustomed to making these annual reports and they make them with considerable promptness. That saves much labor and expense for the bureau. The tardy ones are then communicated with, often by wire, to hurry their reports and finally, agents are sent out to investigate why those who do not respond have neglected

ONE reason for the popularity of The Star Portable Drilling Machine is the saving of time and expense of moving and rigging up. A Star will do for you what it does for others as told in our booklet "PROOF"—sent upon request.

The Star Drilling Machine Co.
Akron Ohio
Factories
Akron Ohio, Chanute Kans., Portland Ore.
Long Beach, Cal.
Export Office: 2 Rector St., New York

BARTLESVILLE SUPPLY COMPANY

Baker Casing Shoe

Manufacturers of the Famous

"BARSCO PRODUCTS"

Drive Shoes, Anchor and Casing Clamps, Male and Female Steel Nipples

Stocks carried by dealers for your convenience

California Pattern Shoe

Texas Pattern Shoe

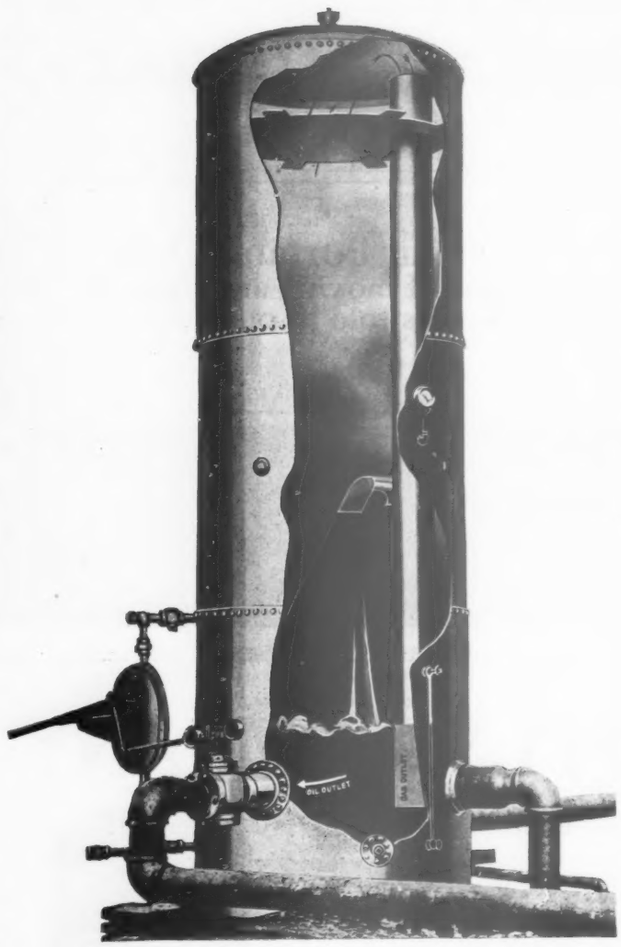
HOME OFFICE:
3400 Maury Avenue
ST. LOUIS, MO.

Regular Pattern Shoe

FACTORIES:
St. Louis, Mo.
Bartlesville, Okla.

M. & F. Steel Nipple

SMITH
OIL AND GAS
SEPARATOR



The initial cost of installing a Smith Separator is practically the last cost as the maintenance cost is very small. Yet it will return a sure profit for years, paying for itself many times over.

Smith Separator Company

Chestnut & Smith Corpn. Bldg.

TULSA, OKLAHOMA

to do so. It is generally well into July or even August when the last of the reports are in hand in the bureau here. Then a force is put to work on the tabulations and within 10 days the figures are compiled and printed and in the mails. Yet, very often men in the industry complain that the census reports are delayed and discuss the advantage that would accrue if they could be made available more promptly.

A great effort is made by the bureau to make the questionnaires as simple in the form of statement as possible and in order to make them practical they are framed in accordance with recommendations from the industry itself.

This work is under the direct supervision of Eugene F. Hartley, chief statistician for manufacturers. Mr. Hartley has been employed in statistical work for the bureau, of one kind or another for 24 years, although he is a young man of 44. He has traveled as agent for the bureau in all parts of the United States and for the last eight years has been chief statistician. He has learned the art of leaving his figures in his office when the closing hour arrives so that although engaged in a nerve racking work it has left no marks upon him. Off duty he is apt to be found in his sail boat which he navigates like a true seafaring man, being navigator and executive officer as well as owner. In this 37-foot boat he has become familiar with the Atlantic Coast line and is never so happy as when he is on the high seas.

PRESENT DAY PROBLEMS PRESENTED IN PIPE LINE TRANSPORTATION

By D. S. Bushnell
President, the Buckeye Pipe Line Co.

Presented at Group Session on Transportation of Oil, December 13. Fourth Annual Meeting, American Petroleum Institute

In many cases, being entirely separated from the control of, or even interest in a source of water supply, the pipe line in its efforts to obtain business must seize every opportunity to increase its efficiency and reduce its expenses. The low cost of pipe line transportation is well known, but that very fact is based on the organization of the pipe line to do a certain bulk of business, and hence the difficulty in times of business depression of effecting economies of operation beyond a certain point. There is the case of a pipe line company whose lines are connected to more than 31,000 wells in one State. The operation of this gathering line system to care properly for the interests of its thousands of patrons requires a certain organization which cannot be reduced or simplified below a given point, and yet a much greater amount of business could be handled by this same organization at practically no increase of expense, could such business be obtained. Thus it will readily be seen that the efficiency of pipe line transportation depends to some extent on the ability of the line to obtain the amount of business for which is was designed.

Again, a pipe line is generally, if not always, constructed to meet the immediate demands of a new field or pool, but so designed as to permit of increase in capacity, should demands require it. How to determine the limits of these demands, without either overbuilding or driving business to the competitor because of limited facilities, is one of the serious problems confronting the pipe line executive in active producing territory.

Improvements in Construction

In years gone by the pipe line was regarded as a simple affair and easily managed. The pipe had to be screwed together—perhaps ditched and buried—perhaps not. The old 18x5 (or several of them) was set up and the required boiler power furnished. Some light buildings to house the machinery were constructed, a few tanks were built and the line was complete. But then came the inevitable improvements—the compound direct acting pump—the triple direct acting pump—the "high duty" direct acting pump—and finally the cross compound and triple expansion condensing flywheel pumping engine with Corliss valves, representing probably the most economical steam driven pump yet developed. But the extension of the oil producing areas of the United States with consequently greatly enlarged pipe line facilities, introduced the problems of suitable water and fuel supply for steam purposes which were not always available. The internal combustion engine had been developed but hitherto not in large units, but an improved type of engine appeared on the market which seemed to solve these problems.

The story of the power development may be duplicated in that of the storage tank. From the small, light tank with lap riveted seams to the great 80,000 and 150,000-barrel tank with double butt strap seams is a long jump. In the development of the storage tank or working tank there has arisen the necessity of more careful handling of the crude petroleum to the end that waste and loss may be eliminated as far as possible. Thus, there have been produced the riveted roof, the welded tank—both shell, bottom and roof, the gas tight roof with breather lines and relief valves, and such modifications as floating roofs, water roofs, etc. Of course, these developments have not been restricted to the pipe lines, but many of the early efforts to reduce the losses on crude oil in tankage were initiated by the pipe lines—as, for example, the experiments with different colored paints for tank shells and roofs to minimize evaporative loss. Experience seems to indicate the reasonable deduction that the gas tight roof materially reduces the fire hazard, as it cuts down the flow of gas rising from the tank to be met by lightning flash, much as a snuffed candle will reignite from the lighted match held above it. It would seem that the possibility of further improvements in tank construction may be the means of effecting still greater economies in operation.

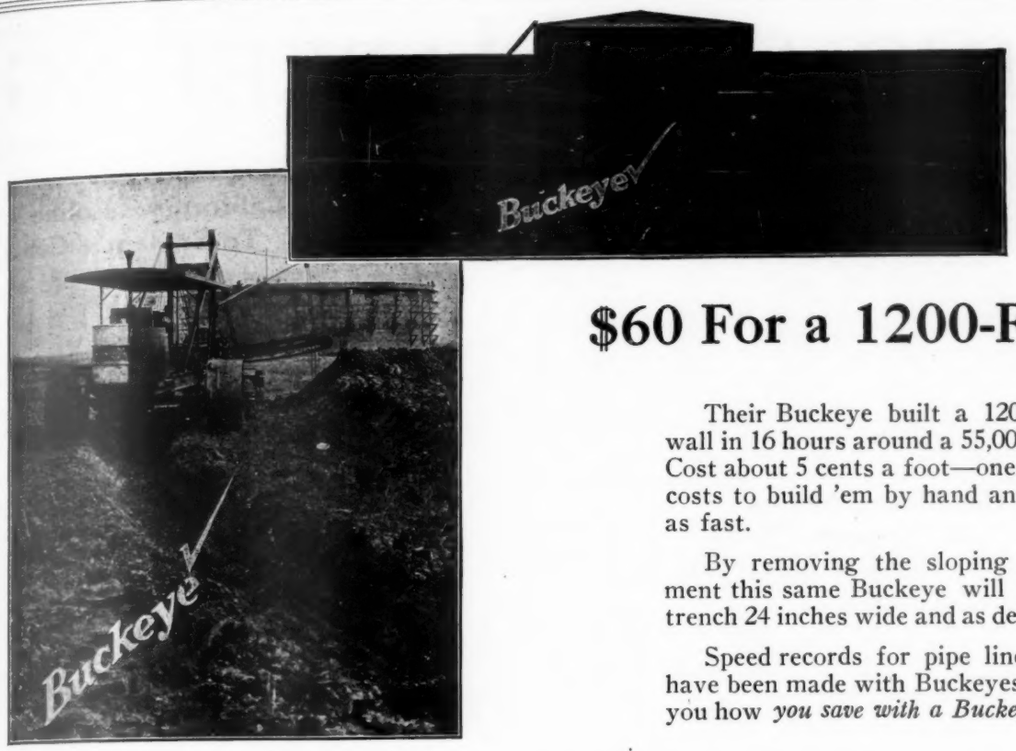
Kind of Pipe

The pipe itself, of course, constitutes a large part of the investment. Formerly pipe was made of iron, but the increased demand developed the use of Bessemer steel. This at first proved unsatisfactory on account of its brittleness, resulting in constant breakage, even during construction. The problem seemed to be solved finally by the development of pipe made from soft steel plates. This pipe could be produced rapidly to meet the growing demands, and was easily handled and durable. In early days but little attention was paid to protective coatings for the line, which was either laid on the ground or buried in a shallow ditch.

But the passage of time showed that some form of pipe coating or protection was required in all but well drained soil. Cement was used with great success and proved satisfactory for ordinary soil corrosion, but the high cost of material and application made it essential to discover some less expensive substitute. Graphite and lead paints were tried but proved lacking in durability and protective quality on buried pipe. Finally, gas tar or refinery tar was tried with excellent results. Many different methods were tried before the pipe line engineers were successful in devising a simple way to apply the coating. There was boxing the line and pouring in the melted tar. This was too expensive. Then each joint was heated and dipped in a tank filled with melted tar. This also was expensive and required most careful handling of the pipe while laying.

Then was tried a method of dipping the pipe and wrapping around each joint long strips of cloth to serve as a binder

(Continued on Page 97)



$60 For a 1200-Foot Wall

Their Buckeye built a 1200-ft. retainer wall in 16 hours around a 55,000-gallon tank. Cost about 5 cents a foot—one-tenth what it costs to build 'em by hand and about twice as fast.

By removing the sloping bank attachment this same Buckeye will dig pipe line trench 24 inches wide and as deep as 6½ feet.

Speed records for pipe line construction have been made with Buckeyes. Let us show you how *you save with a Buckeye on the job.*

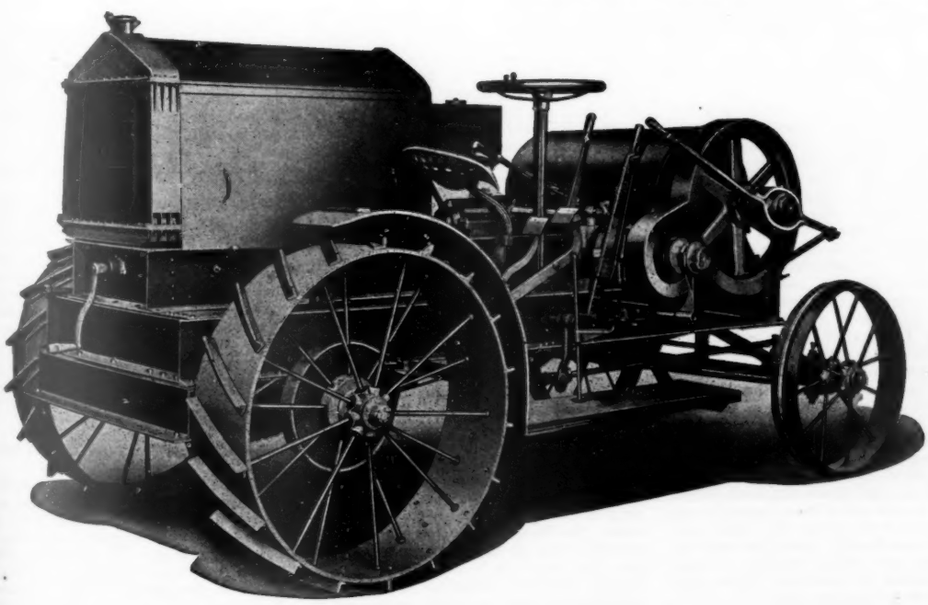
Branch Sales Offices:

New York — Chicago
San Francisco — Los Angeles
Tulsa, Okla. — Denver
Miami, Fla. — Mason City, Ia.
Chatham, Ont. — Salt Lake City
Winnipeg, Man. — Milwaukee
John Birch & Co., Ltd., 2, London Wall Buildings, London, E. C. 2, England

THE BUCKEYE TRACTION DITCHER COMPANY
Manufacturers of Pipe-Line Trench Excavators and Pipe Screwing Machines
FINDLAY, OHIO

Tractor Rod and Tube Pulling and Bailing Machine

"Built for the Job"



Cuts operating cost. Wide range of speeds. Operating levers centrally located. Three speeds and reverse on spool or road. Special features: Shafts mounted on Ball Bearings, heat treated Nickel Steel Gears, Steel Clutches, Bronze Bushings in all parts running loose on shafts; moving parts are enclosed running in oil, protected from dust and dirt. Power take off pulley for belt work. Drawbar on rear full width of machine.

Patents Applied for and Pending

Myrick Machine Co.
Olean, N. Y.

REFINING AND MARKETING SECTION

Wisconsin Jobbers Take First Move for National Advertising

The Wisconsin Independent Oil Jobbers Association has gone ahead of the National Petroleum Marketers Association regarding national advertising for independent petroleum products. At a State meeting held in the Plankington Hotel, Milwaukee, the State body adopted measures and started work on this policy advocated by the parent national organization about a year ago.

The meeting attended by 40 members was called to order by S. S. Cramer, of the Wadhams Oil Co., Milwaukee, president of the State association. Bert Pentmester, of the Oconomowoc Oil Co., Oconomowoc, secretary, was in his place.

The discussion centered around the question of handling the publicity and advertising for the "red-eagle," the emblem of the independents in all parts of the United States. The Wisconsin body decided to make the first move in the direction of a national advertising campaign, repeatedly advocated by the National Petroleum Marketers Association and L. V. Nicholas, its president. This move consisted in the adoption of a measure designed to cover the State of Wisconsin with billboard advertising at points where independent dealers are located.

The significant feature of the move by the Wisconsin jobbers lies in the fact that they are not going to wait for a national plan for financing the advertising, but will go ahead in their State and pay for their own advertising. The costs of the billboard program in Wisconsin will be distributed among all the State members of the association on the basis of inspected gallonage.

A committee consisting of R. E. Andrew, Pennsylvania Oil Co., Madison; J. M. McLaughlin, O'Neil Oil & Paint Co., Milwaukee, and Erle Thompson, Thompson Oil & Supply Co., Oshkosh, was appointed to work out the details of the State advertising campaign and submit a report to the State association at the next meeting, at the Plankington Hotel, Milwaukee, on January 16.

It was suggested that jobbers in particular areas, who do not feel that the proposed billboard advertising campaign is sufficient to their needs, may augment the State advertising with additional group advertising.

The Wisconsin jobbers also entered into a discussion concerning the style for a proposed universal coupon book to be issued by independent dealers, enabling the purchaser to secure petroleum products from any associated independent dealer in any part of the United States. Details are to be worked out, but the sentiment for the adoption of such a coupon book was significant, as the Wisconsin association is undoubtedly the first that has done any constructive work along the line of a universal coupon exchange advocated several months ago by the National Petroleum Marketers Association along with the national advertising campaign.

It was considered in keeping with the sentiment of the members to have the "red-eagle" emblem displayed prominently and the slogan, "Buy Where You See This Sign," on the coupon books also. Members feel they will be able to work out the details of a coupon exchange for Wisconsin dealers at an early meeting and that the adoption of this system will be the forerunner of the national coupon exchange, long sought by the independents. The style for the proposed books is the chief difficulty to be surmounted.

The recent Milwaukee meeting has done much to crystallize the national advertising campaign in favor of independent oil jobbers. The initial steps were taken about a year ago during the annual session of the National Petroleum Marketers in Chicago, when it was determined that a universal emblem should be used at all independent filling stations. The national advertising campaign was spoken of in conjunction with the adoption of the emblem, and the use of a universal coupon book was also advocated.

Use Master Meters At Vacuum Plants For Gas Measuring

The meter department of the Tidal Refining Co. at Tulsa recently worked out a method of handling gas in the Nowata-Chelsea Field which will be of interest to natural gasoline manufacturers generally. In the past the company had found it particularly difficult to meter gas in that area in which they are connected to 3,500 wells belonging to 300 producers. In many cases the gas flow of these wells was so small that the installation of meters at each well would have involved a prohibitive expense.

In these cases it had been the custom of the company to measure the gas for a period of 24 hours to one week every two to three months. On the meter readings of this test period the gas payments were based. When the proration of crude became effective in the Mid-Continent area in mid-summer it was found that, with many wells shut in, this method was unsatisfactory both from the standpoint of the producer and the buyer.

This situation was finally met by the installation of master meters at each vacuum plant in the field. These master meters assure accurate records of the amount of gas actually passing from the vacuums into the gathering lines. The master meters are operated in conjunction with an ordinary meter which for a period of several days will measure the gas. This measurement is used in crediting to each producer a certain percentage of the total gas as measured by the master meter at the vacuum. The data thus obtained forms the basis of the payments to the producers for a period of six months.

In actual practice it has been found that this method is satisfactory to all concerned. For the company it does away with the heavy expense in keeping the meters in repair. Little difficulty is experienced in keeping the master meters in operation.

CASPER GASOLINE SHIPMENTS

CASPER, Wyo., Dec. 10.—The November gasoline shipments for export of the Standard Oil Co. of Indiana from Wyoming points totaled approximately 7,800,000 gallons. The gasoline was moved to Baton Rouge, La., in 13 solid train loads.

CASINGHEAD GASOLINE PLANTS ADD TO REVENUE OF THE OIL BUSINESS

By J. H. Welch
Tidal Refining Co., in "Tidewater Topics"

When gasoline plants first appeared, a few years ago, they were viewed somewhat dubiously by veteran oil producers and refiners. It was mainly newcomers in the industry who buoyantly went in for them. Many of the plants have died on their hands, but a greater number have survived, settling down into dependable performers that are adding much to the revenues of the oil business, besides prolonging the lives of old wells and fields.

Today there are many wells in Pennsylvania and West Virginia, and even in the oil regions of Oklahoma and Texas, that are very decrepit as far as the production of oil is concerned. But gas heavy with gasoline still issues from their casingheads. Succoring lines from gasoline plants reach out to them and they are saved for further usefulness.

In certain of the older Oklahoma shallow fields, it is a robust well that produces a barrel of oil a day. The rank and file make about a quarter of a barrel. Yet these aged wells receive due care, because, in addition to their mite of oil production, they have small but rich offerings of gas for the gasoline plants that dot the fields.

Revive Old Wells

The plants not only bring many wells to a riper age, but also, in some instances, recall wells from that bourne from which none were supposed to return. A recent caller from Pennsylvania told us that wells along Oil Creek that were in their heyday when the industry was young are being reopened because of the coming of gasoline plants, and are producing 10-gallon gas.

In still another way gasoline plants are life-savers for ancient wells. In numerous cases such wells depend upon the plants for the fuel gas required to carry on. Many leases, in their old age, do not produce enough gas for power, and the revenues from their oil are not sufficient to justify the long pipe lines usually necessary to recah a source of fuel gas. A large number of such leases would revert back to farm lands were it not for the fact that they are moored, so to speak, to gasoline plants, and receive fuel gas from the plants' larger resources. To obtain adequate supplies of fuel gas for these demands, it is usually necessary for gasoline companies operating in old fields to lay lines to more or less distant gas wells and to pay at the rate of 10 cents, or in some cases 20 or 25 cents per 1,000 feet for the gas. There is rarely any contract obligation to return to a lease more gas than remains after gasoline extraction and reasonable plant use, but the wells must be pumped if they are to deliver any appreciable amount of gas containing gasoline, so the lease is supplied, gratuitously in most instances, with an amount of gas for power which exceeds the volume of casinghead gas it delivers.

In yet another important way a great number of leases are dependent upon the gasoline plants. When a lease becomes productive of oil and gas in a field where gasoline plants are in operation or contemplation, there are negotiations between the lease owner and the gasoline manufacturer as to the utilization of the gas for gasoline. The lease owner, though naturally wishing to sell what would yield him no profit otherwise, is

(Continued on Page 86)

California Gasoline To England 8 Cents; Retails There at 29

The current year will be profitable for the Anglo-American Oil Co., the Standard Oil marketing unit in the British Isles, which has benefited from largely increased consumption of refined oil products and decline in American oil prices which has permitted it to import gasoline and other products at relatively low prices.

Anglo-American is probably the largest oil marketing unit in the British Isles, with sales of 7,000,000 bbls. of refined oils this year. Due to the reduction of about 10 cents a gallon on gasoline, consumption in Great Britain and Ireland increased 20 per cent during the summer, there now being 700,000 motor vehicles in Great Britain, about 300,000 of which are motorcycles.

One of the big elements was cheap gasoline from California. The company has been bringing in numerous large cargoes, some ships moving 4,000,000 gallons.

Gasoline can be purchased in California at 6 cents a gallon, while tank steamer charters for California-British ports delivery are being made at 2 cents a gallon, or a total cost of 8 cents a gallon laid down in England. Price of finest grade gasoline, in England is 1s. 4d. a gallon, about 29 cents at present rate of exchange. Of course there is the added charge of putting it in tin cans, the marketing method still used extensively in England, cost of delivery and the fact that the Imperial gallon is one-fifth larger than American gallon.

In the first six months of 1923, Anglo-American earned 15 per cent on its £3,000,000 ordinary capital stock or £450,000. It is expected that Anglo will pay 15 per cent in dividends this year, the same as in 1922, so that the year's dividends were earned in first half of the year. The second six months, however, should result in even larger profits because July, August, September and October are the largest consuming months as well as that in that period company was getting its California gasoline at lower prices.

Anglo-American paid off last year $2,500 000 of its original issue of $15,000,000 serial notes without any new financing and this year paid off a similar amount without new money, so that note issue has been brought down to $10,000,000.

TO START WYOMING REFINERY

CASPER, Wyo., Dec. 10.—According to reports here the Vulcan Oil Co. has acquired the McGimpsie property in southwest Wyoming and also the refinery located at LeRoy, Wyo. These reports which are considered authentic state the refinery which has been shut down for some time will be operated by the company with the production obtained in that district. The refinery which has a capacity of a few hundred barrels was built by the Standard Reserve Oil Co. about 20 years ago.

NEW HOUSTON OFFICES

HOUSTON, Tex., Dec. 10.—Offices of the Keen & Woolf Oil Co. here will be moved January 1 from the Binz Building to suite 408 Keystone Building, now being completed. The Houston office is confined to sales of finished oils from the plant on the Houston Ship Channel. R. E. Benner is in charge. Headquarters of the company is in Shreveport.

QUALITY

THE PURE OIL COMPANY
PURE OILS
PRODUCERS REFINERS MARKETERS

Gasoline, Kerosene, Naptha, Gas Oil, Fuel Oil, Lubricants, Paraffin Wax, Road Oil. Shipments in any Quantity from Seven Refineries

Products of

The PURE OIL Co.

General Offices: Columbus, Ohio

Branch Offices

CHICAGO, ILL.
SPOKANE, WASH.
DALLAS, TEXAS
SAN FRANCISCO, CALIF.
NEW YORK, N. Y.
PITTSBURGH, PA.
TULSA, OKLA.
PHILADELPHIA, PA.
CHARLESTON, W. VA.
MINNEAPOLIS, MINN.
SEATTLE, WASH.

Gasoline Stocks Compared With Demand

Actual Quantity on Hand Generally Meaningless Unless Normal Consumption for That Period Is Considered Also

By H. K. Davis
Statistician, Western Petroleum Refiners' Association

Possibly no statistics of the refining industry have been the subject of so much comment, during the current year, as those regarding stocks of gasoline, and probably no statistics of the industry are so susceptible of misinterpretation.

Invariably, since we have had available reports, refinery operations have been divided into two distinct and alternating periods, one during which production exceeded consumption and stocks accumulate, and one during which consumption exceeded production and stocks decline in volume. These alternating periods, from January, 1917, down to the present time, are shown in the following table:

Six months increase—January 1917 to June, 1917, inclusive.
Three months, decrease—July, 1917 to September, 1917, inclusive.
Six months, increase—October, 1917 to March, 1918, inclusive.
Seven months, decrease—April, 1918, to October, 1918, inclusive.
Seven months, increase—November, 1918, to May, 1919, inclusive.
Five months, decrease—June, 1919 to October, 1919, inclusive.
Six months, increase—November, 1919 to April, 1920, inclusive.
Five months, decrease—May, 1920 to September, 1920, inclusive.
Eight months, increase—October, 1920 to May, 1921, inclusive.
Five months, decrease—June, 1921 to October, 1921, inclusive.
Six months, increase—November, 1921 to April, 1922, inclusive.
Five months, decrease—May, 1922 to September, 1922, inclusive.
Seven months, increase—October, 1922 to April, 1923, inclusive.
Five months, decrease—May, 1923 to September, 1923, inclusive.

This condition is caused more by a seasonal variation in the demand for gasoline than by sudden changes in the volume of manufacture, as output is regulated to a great extent by requirement for the product and the normal change in output is but a reflection of the natural growth of the industry as it keeps pace with an increasing demand for the product.

The very marked characteristics of this seasonal variation in our domestic consumption of gasoline will be readily appreciated by an examination of the following table, which shows the percentage of the year's total consumed during each month, based on the combined experience of the years 1919 to 1922, inclusive:

January, 6.59 per cent of year's total.
February, 5.18 per cent of year's total.
March, 6.70 per cent of year's total.
April, 7.13 per cent of year's total.
May, 8.90 per cent of year's total.
June, 9.57 per cent of year's total.
July, 10.60 per cent of year's total.
August, 11.07 per cent of year's total.
September, 10.04 per cent of year's total.
October, 9.56 per cent of year's total.
November, 8.36 per cent of year's total.
December, 7.28 per cent of year's total.
Total 100 per cent.

If we omit the earlier years, when unusual conditions existed due to the war, there has been some degree of regularity in these alternating periods of contraction and expansion in stocks of gasoline. The rise and fall in the various refinery sections of the country do not, however, display the same regularity as the national figures. For example, going back no farther than the present year, we find that during February and March the Louisiana-Arkansas group of refineries were disposing of their gasoline in larger volume than their output, while stocks were accumulating in all other sections and in the country as a whole; during May, the Oklahoma-Kansas, Louisiana-Arkansas, Colorado-Wyoming and California refineries were accumulating gasoline while all other groups and the country as a whole were disposing of the product in excess of output; during June, Texas refineries only, were accumulating gasoline; during August, Louisiana-Arkansas refineries were still accumulating gasoline, while California joined with the other groups of refineries in reducing stocks of the product.

Relative Size of Stocks

With continually changing conditions and especially in dealing with a commodity such as gasoline, which is subject to an increasing demand and also to a wide variation in volume of consumption, it is of great importance that we have some measure by which we can determine the relative size of our stocks at various times, since much of the success of the industry is dependent upon the co-ordination of supply and demand. It is obvious, in view of the conditions we have named, that what would constitute a reasonable reserve of the commodity at the close of June of last year might be entirely inadequate at the close of June of the current year, due to the increased demand; also, that what would constitute a reasonable supply at the close of January would be entirely inadequate at the close of June, due to the seasonal variation in consumption.

Methods of Comparing Stocks

It has been the common practice to examine and compare the size of gasoline stocks at the close of various months by an inventory of the number of gallons on hand at the refineries or by converting these quantities into terms of days' supply as measured by the average daily consumption during the month. The first method offers no true measure of comparison, due to the change in demand, and the second offers no true measure of comparison as the gasoline on hand at the close of the month must be consumed during some subsequent time, during which the rate of consumption will be vastly different.

No statistics are available showing actual consumption of gasoline, and that which is ordinarily termed consumption is simply the amount of gasoline shipped from the refineries as indicated by their stocks at the first and last of the month in conjunction with the amount manufactured. If a refinery reports gasoline stocks of 100,000 gallons on the first of the month and 75,000 gallons at the close of the month, and manufactured 50,000 gallons during the month, it is evident that 75,000 gallons were shipped during the month. Had stocks on the first of the month been 75,000 gallons and stocks at the close been 100,000 gallons and output during the month 50,000 gallons, it follows that 25,000 gallons of the output were added to stocks and consequently, shipments amounted to but 25,000 gallons. It is from a composite of reports of this character from all refineries that the quantity termed consumption is determined, and domestic consumption is computed by using the quantity termed consumption, adding thereto the amount of gasoline imported during the month and then subtracting the amount exported. As unusually large shipments tend to lessen the number of days' supply on hand, and unusually small shipments tend to increase the number of days' supply on hand, if measured by the current rate of consumption, a comparison of such figures may be entirely misleading as to the relative condition of stocks. The general tendency of such comparisons is toward an exaggeration of the period of both good and bad business.

Refining Operations

The following table showing the operations of a refinery during June and October will clearly illustrate the fallacy of using either quantity or days' supply at current rate of consumption as a measure of stocks for comparative purposes:

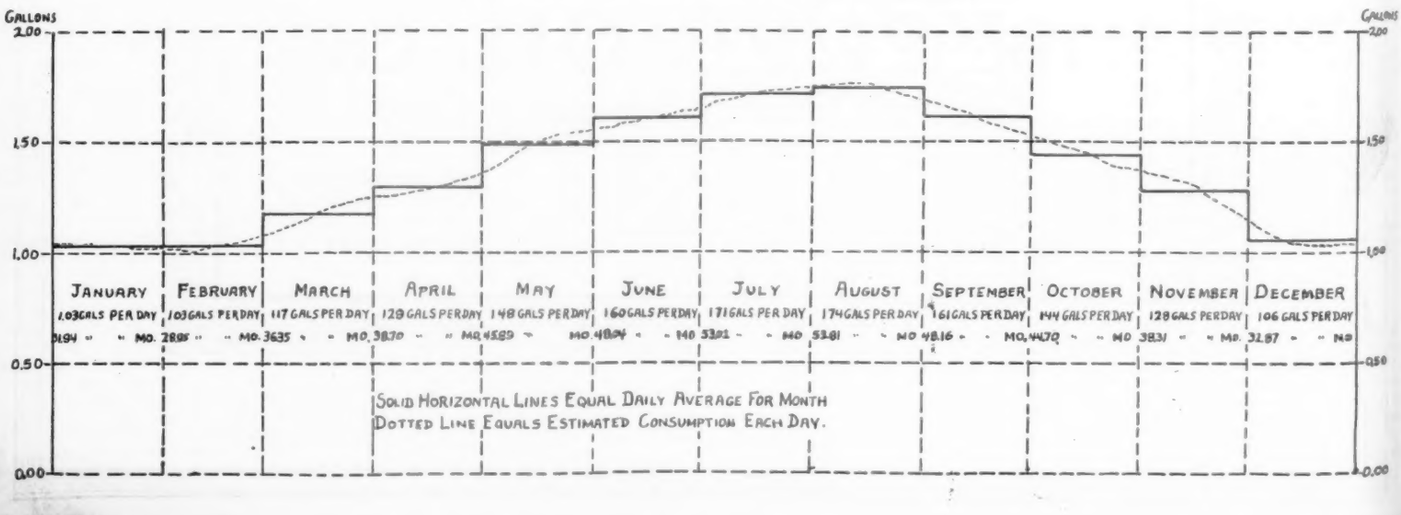
June (business poor), stocks of gasoline first of month, 60,000 gals.; stocks of gasoline close of month, 70,000 gals.; change in stocks during month, 10,000 gals., increase; manufactured during month, output, 40,000 gals.; shipments during month, consumption, 30,000 gals.; average shipments per day, 1,000 gals.; days' supply on hand at close of month based on rate of consumption during month, 70 days.

September (business good), stocks of gasoline first of month, 60,000 gals.; stocks of gasoline close of month, 40,000 gals.; change in stocks during month, 20,000 gals., decrease; manufactured during month, output, 40,000 gals.; shipments during month, consumption, 60,000 gals.; average shipments per day, 2,000 gals.; days' supply on hand at close of month based on rate of consumption during month, 20 days.

Now, these stocks on hand at the close of June and September, as shown above, are of course, not consumed at the rate established during those months but will be consumed during the succeeding months, and during those months the rate of consumption per automobile is vastly different. If the normal consumption is assumed to be 1,500 gallons per day during the period the June stocks will be consumed and 1,000 gallons per day during the period the September stocks will be consumed, it is apparent that the 70,000 gallons on hand June 30, as shown in the above table, will constitute but a normal 47 days' supply and that the 40,000 gallons on hand September 30 will constitute a normal 40 days' supply.

A comparison of relative stocks at the close of June and September at the refinery used as an example, using three

TOTAL DOMESTIC CONSUMPTION OF GASOLINE PER REGISTERED MOTOR CAR PER DAY & PER MONTH
(BASED ON EXPERIENCE FROM JANUARY 1917 TO SEPTEMBER 1923)



BIGGS TANKS

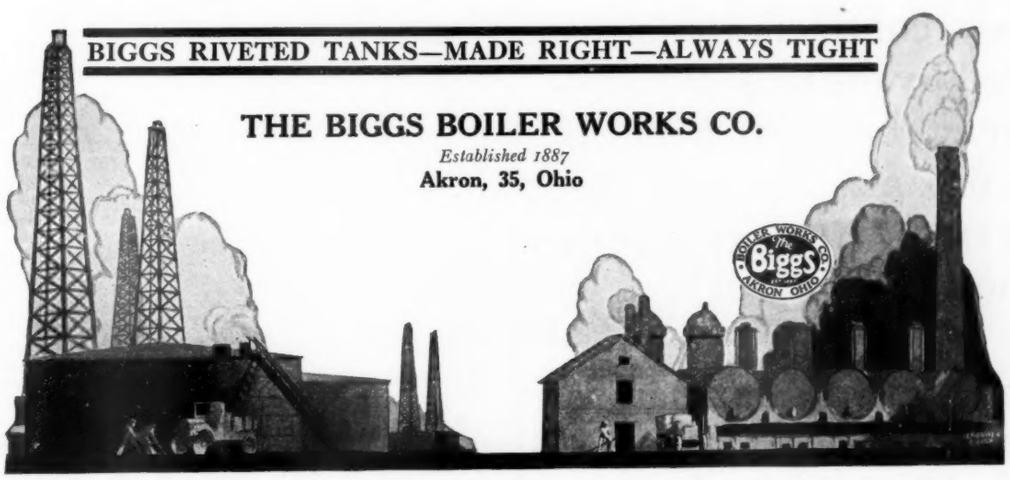
Field Storage and Refinery Equipment

WORKMANSHIP, delivery, price — these are what determine your satisfaction when you buy refinery equipment or field storage tanks.

Thirty-six years devoted to the fabrication of high grade steel plate products is the Biggs' guarantee of highest quality workmanship.

The big new addition to the Biggs' plant, built and equipped expressly to serve the petroleum industry, is your assurance of quick delivery at satisfactory prices.

Let us show you what quality, speed and economy mean. Send us your next inquiry on stills, agitators, run-down tanks, or other refinery equipment, or on storage tanks of 55,000 bbls. capacity and up.



85

Your Success Is Ours

The success that has been attained by this organization is the result of the confidence of an ever increasing number of jobbers who have relied on us to supply them with petroleum products at the best prices obtainable on contract or spot shipment.

Taxman contracts are based on that old law of averages which, over a period of time, is bound to result in profit to the buyer.

That these contracts are fair is evidenced by the large volume of contract business handled by this organization, and the good will of its members throughout the industry.

A contract with Taxman is profit insurance.

TAXMAN REFINING COMPANY
Sales Agents
New York Life Bldg. Kansas City
116 S. Michigan Ave. Chicago

different methods, may, therefore, be summarized as follows:

Stocks at close of month are as follows:

June, comparison of quantity only, 70,000 gals.; number of days' supply on hand, based on rate of consumption during month, 70 days; based on normal rate of consumption during time gasoline will be actually consumed, 47 days.

September, comparison of quantity only, 40,000 gals.; number of days' supply on hand, based on rate of consumption during month, 20 days; based on normal rate of consumption during time gasoline will be actually consumed, 40 days.

From the above, we are quite sure, all must agree that our usual measure of days' supply is entirely inadequate as a measure of relative gasoline stocks; that the actual quantity is also meaningless in view of the changes in seasonal consumption, as shown by a previous table; and that we should ignore the usual methods of measurements and determine normal consumption for the actual period of time during which the product is to be consumed, if we are to properly compare gasoline stocks at various times.

Stocks Compared With Demand

So large a portion of our domestic gasoline consumption is dependent on the requirements of motor cars for the product that the consideration of other requirements, regarding which we have no exact data, may be properly, and must be, of necessity, eliminated from our calculations. The use of gasoline by motor boat and motorcycles will probably show a somewhat similar seasonal variation in quantity to that of motor cars, and computations regarding domestic consumption of gasoline based on registered motor vehicles will unquestionably reflect the situation in a manner approximately correct.

We have no available information showing gasoline consumption by motor vehicles during the various days of the year, but at fixed times we have knowledge of the volume of our domestic consumption of gasoline and also of the number of registered motor vehicles whose requirements enter so largely into domestic consumption. The figures of the National Petroleum War Service Committee and the Bureau of Mines, showing domestic consumption during each month of the year from January, 1917, to September, 1923, are available and Automotive Industries has compiled the number of passenger and commercial automobiles registered at the close of each year, and also at the close of June for the years 1922 and 1923. Undoubtedly, the increase in registrations is not uniform for each of the months during the periods intervening between the dates on which the actual number of registrations is known, but in lieu of accurate information we have assumed that to be the case and arrived at an estimate of the registrations at the close of each month for which we have the known domestic gasoline consumption. The following table shows the result of this computation:

	Per Month	Per Day
January	31.94	1.03
February	28.85	1.03
March	36.35	1.17
April	38.70	1.29
May	45.89	1.48
June	48.04	1.60
July	53.02	1.71
August	53.81	1.74
September	48.16	1.61
October	44.70	1.44
November	38.31	1.28
December	32.87	1.06
Total year	500.64	1.37

Normal Consumption of Gasoline

Using the average normal consumption of gasoline for all domestic purposes per registered car per day during each month of the year, as shown above, we have determined the probable normal consumption for each day of the year. In arriving at this, we had no definite knowledge of the exact dates for peaks of consumption, but we do know that the sum of our estimates for each day of the month is the correct average for that month, and that the sum of our estimates for each day of the year is equal to the correct average for the year, as indicated by the statistics of the 81 months for which such information is available. The blueprint chart attached to this bulletin shows the trend of those daily estimates throughout the various months of the year. In using the experience of but a few years we realize that abnormal years may unduly influence the result, and that there have been changes in gasoline consumption per car per year, as will be seen from the table shown below:

Year 1917	546 Gals.
Year 1918	554 Gals.
Year 1919	494 Gals.
Year 1920	512 Gals.
Year 1921	462 Gals.
Year 1922	484 Gals.

It may be that the earlier years shown are not typical, also that general business conditions, changes in type of motor vehicles, etc., have influenced gasoline consumption and that their effect must be minimized by the acquisition of additional statistics before normal consumption per registered car can be accurately determined. We believe, however, that the experience of nearly seven years should determine figures that must be at least approximately correct. Our number of registered cars has now reached such magnitude that with the normal consumption per registered car fairly well determined, it would require a very poor estimate of our increase in registration from month to month to materially effect an estimate of the normal requirements for any month of the immediate future.

If we adopt the method of basing probable domestic consumption during the last three months of 1923 on a conservative estimate as to the number of motor vehicles, which may be reasonably expected to be registered at the close of each month and apply the normal consumption of gasoline for all domestic purposes per registered motor car, the figures for the year will be as follows:

Estimated registration of passenger and commercial motor vehicles at close of month, January, 12,373,334; February, 12,508,293; March, 12,643,252; April, 12,778,211; May, 12,913,170; June, 13,048,128; July, 13,183,097; August, 13,318,066; September, 13,453,035; October, 13,588,004; November, 13,722,973; December, 13,857,942.

Estimated normal consumption per car, gals., January, 31.94; February, 28.85; March, 36.35; April, 38.70; May, 45.89; June, 48.04; July, 53.02; August, 53.81; September, 48.16; October, 44.70; November, 38.31; December, 32.87.

Estimated normal consumption, gals., January, 395,204,288; February, 360,864,255; March, 459,582,210; April, 494,516,766; May, 592,585,371; June, 626,832,069; July, 691,967,803; August, 716,645,131; September, 647,898,166; October, 607,383,779; November, 525,727,096; December, 455,510,554; total, 6,581,717,486.

Actual shipments from refineries for domestic purposes as per Bureau of Mines, gals., January, 457,067,163; February, 398,093,388; March, 446,460,208; April, 487,837,277; May, 582,554,181; June, 633,504,590; July, 674,019,467; August, 692,185,610; September, 655,377,616.

From the above table it will be noted that by this method of estimating the normal requirements during the first nine months of 1923 would be 4,993,096,057 gallons, while the actual shipments during that period amounted to 5,009,109,500 gallons as shown by the reports of the Bureau of Mines. This table also shows that the shipments of gas line from refineries for domestic consumption during 1923, using the rate of normal consumption per registered car as a basis, should amount to 6,581,717,486. The refineries will also be called upon to supply some gasoline for export. If our net exports during the first nine months of the year are representative of those for the entire year, net exports for 1923 will be 652,808,094 gallons. Normal shipments plus net exports for the year should, therefore, be 7,234,525,580. Thus, in an entirely different manner from that employed in our recent Bulletin No. 48 we arrive at the same conclusion, namely, that our total shipments from refineries during the current year will not exceed 7,500,000,000 gallons.

An interesting result of a comparison of the estimated normal domestic consumption with the amount of gasoline actually shipped by the refineries for domestic purposes is that we have an in-

If You Use

Commercial Flour Sulphur

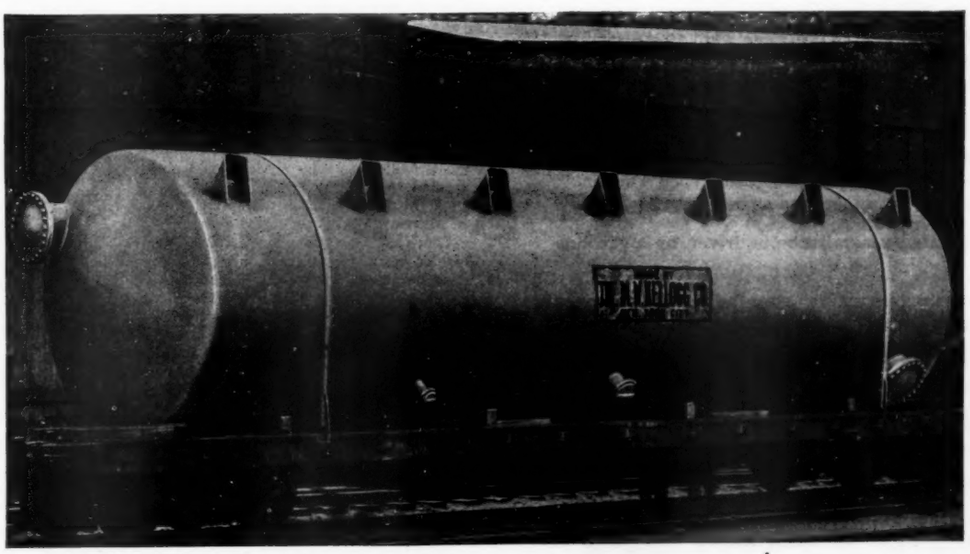
We can supply you to your advantage
Write us concerning your requirements

Texas Gulf Sulphur Company

(Incorporated)

General Offices
41 East 42 Street, New York

Sulphur Deposit and Plant
Gulf, Matagorda County, Texas



Forge Welded High Pressure Stills Have Made Possible the Rapid Development of Cracking

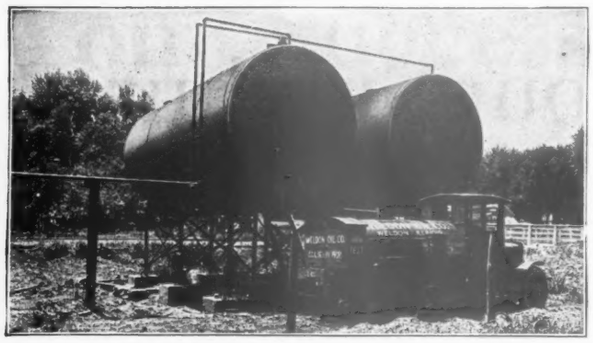
The riveted or autogenously welded still is not equal to the test of high pressures and heats imposed by modern cracking processes. The forge welded one-piece still alone can stand the strain.

Mid-Continent Representative
PAUL GERHARD
307 Kennedy Bldg., TULSA, OKLA.

THE W. M. KELLOGG CO.

140 Cedar St., NEW YORK CITY

"Tanks you can Leader buy—and forget"



Complete Equipment for Bulk Station Plant

Why get a piece meal job, when you can buy a complete installation from one manufacturer? Why take chances on parts not fitting—on delays in transportation—and, on a lack of centralized responsibility?

Leader engineers have planned and superintended the installation of many bulk station installations. Their services are free for the asking.

The above cut shows a very recent bulk station installation which includes the following Leader equipment:

2—15,000 RIVET-WELD Storage Tanks
(Riveted for strength—welded for tightness)
2—3 Pier Structural Steel Supports
2—Truck Tank Loading Racks
1—Double Line Tank Car Unloading Rack
1—360 Gallon—3 Compartment Truck Tanker
1—150 Gallon—2 Compartment Ford Truck Tanker
1—Twin Rotary Pump, known as No. 3600

The pump in the above installation is driven by a gasoline engine.

Besides the above, the Leader furnishes the necessary valves and fittings which go with each installation.

Be right first, and your right last. Leader is sure to satisfy you. Why take a chance? An investigation costs nothing and may save you much "grief."

Write for our new bulletin on Bulk Station Equipment.

Leader "Safety First" air tanks satisfy both law and users. Accidents are expensive. Why take chances? Leader standard of air tank construction will not be lowered below the safety mark, even though the customer agrees to be responsible.

LEADER IRON WORKS
Plant: Decatur, Illinois
Offices: CHICAGO, 327 S. La Salle St., NEW YORK, 21 E. 40th St.

dication as to whether the purchasers of gasoline are buying in excess of requirements and consequently storing the product, or whether a reverse situation exists and they are drawing on their stocks. From the last table shown it is indicated that during January and February of the current year purchasers were storing gasoline; during March, April and May, were drawing on stocks; during June, added slightly to their supply; again drew on stocks during July and August; while September shipments were slightly in excess of normal.

Comparison of Stocks

In the following table we have compared the stocks at the close of each month since January of last year, showing first, the actual quantity held in storage; second, stocks measured in terms of days' supply at the rate of domestic consumption during the month; and third, the number of days' supply based on normal consumption for all domestic purposes per registered motor vehicle during the period in which the gasoline will actually be consumed:

	Actual Quan., gals.	Days' supply based on rate of dom. consump. during mo.	Days' sup. based on normal consump. for days dur. which gaso. will be consmd.
1922—			
January ..	705,711,191	77	60
February .	807,379,261	86	62
March ...	854,231,655	70	59
April	892,567,766	70	55
May	856,607,102	53	49
June	824,966,456	49	45
July	772,908,949	42	41
August ...	703,738,310	37	40
Sept.	690,050,809	41	42
October ..	723,584,062	46	52
Nov.	776,723,619	48	62
Dec.	883,792,861	63	59
1923—			
January ..1,002,857,273		68	72
February .1,130,340,767		83	72
March ...1,259,209,171		87	71
April 1,336,417,871		82	68
May 1,328,533,247		71	62
June 1,263,583,128		60	56
July 1,165,389,340		54	52
August ...1,053,856,221		47	51
Sept.	972,704,832	44	52

A good illustration of the three methods of considering stcoks is offered by a comparison of the figures for March and April, 1922, shown in the above table. Based on quantity only, stocks at the close of April were greater than at the close of March; based on rate of consumption during the months, stocks were equal at the close of each month. However, if we consider normal demand for gasoline during the days to come in which the product is to be actually consumed, we find that stocks at the close of April were relatively smaller than at the close of March.

If we consider the figures for September of the current year, we find that gasoline stocks were reduced in quantity at the close of the month from the amount held by refiners at the close of the previous month; stated in terms of days' supply at the rate of consumption during the month, stocks also appear to be at a lower level, while if a measure which we believe to be correct in principle is applied, we find stocks at the close of September were relatively greater than at the close of August. In our recent Bulletin No. 48, issued before the September figures were available, we called attention to the fact that the gasoline situation was gradually assuming a more normal aspect; the September figures substantiate that statement and while the gasoline stocks of the nation, after a continuous relative decline for eight months, are relatively once more cate they will be lower at the conclusion in the ascendancy, statistics still indi- of the current year than at the same time a year ago.

Value of Normal Consumption

If we examine the measures suggested for a comparison of relative supply and demand, it will be found that their application would have been of value to us last January. About the middle of that month the Bureau of Mines reported that gasoline stocks at the close of November, 1922, at all refineries amounted to 776,723,619 gallons, as compared with 495,590,059 gallons at the close of November of the previous year. The first table presented in this bulletin shows that, since statistics of the industry have been available, December has always been a month during which gasoline stocks have shown an increase; hence, early in the current year we knew that, based on quantity only, our supply of gasoline was probably about 50 per cent greater than a year ago. However, it was also common knowledge that demand had increased and that the quantitative figure would not be a true comparison of relative stocks as the increased demand must also be considered. The latest available figures for domestic consumption were those of November, 1922, and indicated an increase over the previous year of 37.29 per cent, and if the stocks at the close of November, 1922, were converted into terms of days' supply at the current rate of consumption they would constitute a 48 days' supply, compared with a 42 days' supply on the same day of the previous year. On the face of it, this did not appear alarming; however, had stocks been examined with respect to the normal rate of demand per registered car during the days in which the gasoline would be consumed, it would have been apparent that our supply was more excessive with respect to probable demand, as the number of days' supply on that basis was 62, compared with 46 on the same day of 1921, 38 on the same day of 1920, or 48 on the same day of 1919.

During January the number of registered motor vehicles at the close of 1922, as compiled by Automotive Industries, was stated in various trade papers to be 12,238,375. Had the method we have suggested as being reasonable for estimating future demand been applied to the then available statistics, the estimate for the first six months of the current year would have been as follows:

Estimated motor vehicle registration, January, 12,510,083; February, 12,781,791; March, 13,053,499; April, 13,325,207; May, 13,596,915; June, 13,868,623.

Normal consumption for all domestic purposes per car per month, gals., January, 30.48; February, 28.61; March, 36.65; April, 38.85; May, 46.12; June, 47.90.

Estimated domestic demand, gals., January, 381,307,330; February, 365,687,941; March, 478,410,738; April, 517,684,292; May, 627,089,720; June, 664,307,042; total, 3,034,486,163.

In the above table the normal consumption per car per month is slightly different from that shown in a previous table of our bulletin due to the fact that during January knowledge of the statistics of subsequent months was not available. The estimate of auto registration also proved to be excessive as but 13,048,128 were registered at the close of June, this information, however, not being available until some time during July. Our estimate for the first six months of 1923, based on past experience, would have been but 1.57 per cent in excess of the actual shipments for domestic purposes during that period. The method of basing estimates of future supply on normal consumption per car and estimated auto registration will, we believe, render impossible any great error regarding the demands of the immediate future.

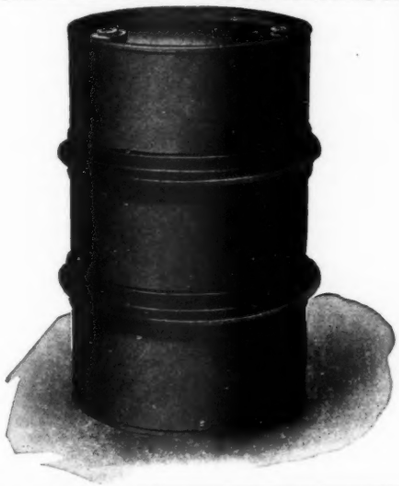
This is a statistical age and we believe no refinery executive can afford to ignore the many interesting and instructive facts that may be determined by an examination of the available records of the industry.

For the benefit of those who may be interested in our estimated normal consumption of gasoline for all domestic purposes per registered passenger and commercial motor vehicle, we are attaching Table A, consisting of four pages, showing the estimates for each day of the year, conveniently arranged for a determination of the relative size of stocks at the conclusion of any month, while Table B, also attached, shows the estimated and actual motor vehicle registrations and monthly domestic consumption of gasoline since January, 1917.

P.I.W.
STEEL PLATE CONSTRUCTION

That Rugged Chime

is the reason "Presteel" Drums come back again, time after time, from long hard trips. It's this chime that holds its contents intact long after the ordinary package has passed to the scrap heap.



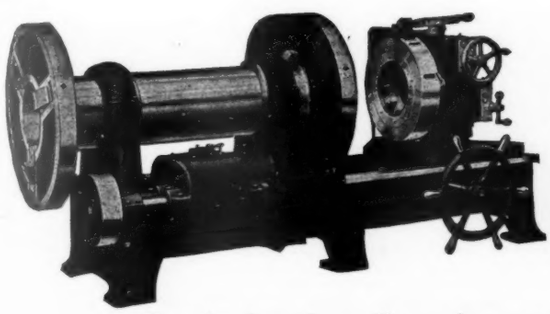
Because the chime is the vulnerable point on a container P. I. W. leaves nothing undone to make it perfect. The chime ring is a heavy section of specially rolled steel. The head and shell fit into a snug recess in this ring and the extending lip of the ring is then rolled down compactly making a tight package of extreme long life.

"Presteel" Light Gauge Drums, 15, 30, 50 and 55-gal. capacities.
"Presteel" I. C. C. Drums, 30, 55 and 110-gal. capacities.
"Presteel" Special Drums, 150 and 175-gal. capacities.
"Gem" Bilged Steel Barrels, black, galvanized or tinned, 55-gal. capacity only.

The Petroleum Iron Works Company
Pressed Steel Products Dept.
Sharon, Pa.
New York St. Louis Houston Tulsa Casper San Francisco

P. I. W. STEEL PLATE PRODUCTS ARE USED IN THE PETROLEUM, GAS, MINING, RAILWAY, IRON AND STEEL, WATERWORKS, ENGINEERING AND ALLIED INDUSTRIES.

PEERLESS B&K DUPLEX P.D.Q.C



ALWAYS ON THE JOB

Ready for threading pipe any moment from Monday morning to Saturday night—overtime, too, if needed. Continuous satisfactory service in a machine starts in the designing. There is where every little detail is studied with a view of producing a finished machine that will stand the hard knocks. Every part will sooner or later be called upon to stand right up to hard work. The dies, the die adjusting device, the cut-off, the chucks, the oiling system, should all be dependable. B&K machines have that look of strength and bigness that you like to see in a pipe machine.

FORGE AHEAD WITH A BETTER THREAD

SEND FOR A CATALOG

BIGNALL & KEELER MACHINE WORKS
Edwardsville, Ill.

TNEMEC
FLOOR PAINT

For Concrete Floors

TNEMEC Floor Paint was developed to supply a need for a paint especially adapted to use on concrete floors. It has a special affinity for concrete surfaces, takes hold strongly and supplies to a surface normally hard but with a tendency to pulverize, a tough, leathery finish which prevents dusting and insures long life.

TNEMEC gives a lustrous finish with the same marked durability which characterizes TNEMEC Rust-Proofing and Weather-Proofing Paints. It also provides an ideal finish for wood, tile, and other types of floors.

Ask the Continental Supply Company about TNEMEC paint.

TNEMEC PAINT & OIL CO.
119 Roanoke Road, Kansas City, Mo.
Chicago Office: 122 S. Michigan Ave.

TNEMEC
A Standard by which other Paints will be measured
134

GOOD WEATHER AIDS GASOLINE MARKET

Open Season in Chicago Territory Results in Continued Good Demand With Prices for New Navy Steady. Same Condition, However, Causes Further Weakness in Natural Gasolines. Fuel Oil Demand Mediocre.

By Ralph T. Baker

CHICAGO, Dec. 10.—Continued demand for New Navy gasoline in the Chicago territory during the past few weeks has been reflected in a market which still exhibits firm tendencies. One refiner declared the secret of the recent good prices for Navy was attributable solely to the excellent weather conditions that have prevailed to date in the Chicago area and the States of the Upper Mississippi Valley. He asserted that a change in weather would see the end of the frantic hand-to-mouth buying on the part of the jobbers who have been forced to pay higher prices when caught short of a sufficient supply of motor fuel in past days.

Many refiners look for a rush to fill storage after January 1, if the winter continues open. They point to a decreasing crude oil supply and a better crude oil market as an important optimistic factor. Many men argue that the bottom of the refined oil market has been reached and the rebound will come soon.

Others assert that higher prices for refined products are out of line at this time, just at the start of the winter season which cannot help but slow down motor operation.

New Navy Prices Firm

The New Navy situation around Chicago may be said to be firm with the prices of the former week holding steady. There has been little change in price, differences pointing to slight strengthening if they can be made noticeable.

As one marketer aptly put it, "We can't buy under 6½ cents and we can't sell above 6¾ cents." This in a measure shows the condition pretty well. Navy to the trade is almost universally 6¾ cents. A few small sales at 6⅞ and 7 cents were reported. Top might easily be placed at 6⅞ cents. On the other hand, several marketers say they have been unable to get 6½-cent gasoline out of Group 3 for resale during the latter part of the week. It seems that the 6½-cent stuff has passed out with the 6-cent and 6¼-cent motor fuel of previous weeks.

The demand for New Navy seemed to show some inclination toward lethargy during the week. Most of the large refiners are sold up over the balance of the month and have set a price considerably in advance of the actual market. This leaves little room for any compelling interests from them in the market developments over the remainder of December. Most refiners seem to think prices now in effect will continue over the month. They are pointing to January as a possible period of interesting developments, however.

The higher gravities continued firm, with some export demand for 64-66, 375 end point, tending to keep the market steady to firm. The 60-62 gravity and the 68-70 grade were held in line by the export material. There has been a little more interest shown by domestic buyers also during the past week, and demand is expected to strengthen with the first cold snap.

Naphthas and 56-58 450 end point gasoline have been holding steady due to their scarcity. Refiners have quit making these products and users are finding they are compelled to pay slightly more than they did last week. There is only a small amount of naphtha and 56-48 gasoline moving, however, with but little demand evidenced.

While the open winter has helped New Navy, it is said to be the cause, or one of the causes, for the weakness in natural gasolines and the lighter fuel oils. It is true that there is hardly any demand for natural gasoline at this time. It was again slightly weaker over the week end. Blends, as a result of the weakness in natural gasoline, showed no inclination toward strength, although they held steady due to some increase in inquiries. Specialists in these commodities are hanging on in anticipation of future demands during cold weather. The comparatively low price for New Navy has contributed much to the disorganized condition in blends.

Kerosene

Kerosene has held steady during the week with a fair demand exhibited. The export demand is responsible for its firm tendencies, and many cars are still being sought by the companies holding the large orders. There is little domestic demand, however, and the export situation is the dominating factor expected to hold the price for this material firm during the balance of the month at least. Some reports of 5-cent kerosene have been received, but the bulk of the trading has been kept at 4½ cents to 4¾ cents. One exporter is reported to have been caught short and this has done much to keep the market at a good level. Rumors of new export orders are also contributing largely to the good feeling.

Just as good weather has been beneficial to some lines of refined products it has hurt others. Distillate weakened under the slow demand due to an open season with little necessity for increased fuel consumption. While refiners are glad to have good motoring weather they are agreed that all lines of fuels would be helped by a period of cold weather. Gas oil is holding fairly steady, but is not expected to show any remarkable activity under prevailing conditions. Industrial demand has been responsible for its steadiness.

Fuel Oil Situation

Entrance of railroads in the market as buyers of 24-26 gravity fuel oil has helped that situation materially. The price is merely steady, however, with the demand considered mediocre for the present time of the year. Some railroads are expected to do a large amount of buying soon, due to the present bedrock prices and the probability that there will be a crude advance in a short time. The heavier fuels are in line with former prices, little exceptional activity or demand having been noticed.

Chicago oil men feel that present prices for all products will hold fairly steady due to the crude oil situation and the evident desire on the part of some refineries to build up storage while crude is cheap. Present runs are not considered excessive under prevailing conditions. Rumors that Cosden & Co. is intending to go into the distributing business on a large scale have been discussed largely in the Chicago territory recently.

Fuel oil specialists anticipate a weakening between December 15 and 31, with a good market after that time. The present demand is for low sulphur content oil, such as can be furnished from northern Oklahoma crude. There is still a considerable amount of higher sulphur content oil available, which is expected to keep down the anticipated strengthening of the market. Cheap coal in the Central States has worked largely to a softer fuel market.

All lubricants are holding approximately the same positions they maintained during the previous week. Some neutrals are a shade stronger if a fine distinction may be drawn. Movement has been slow, however. Wax is still strong and hard to buy.

Friction Transmission

The greatest feature ever built into a pumping engine

Because it—

Eliminates reverse gears and clutch.
Cannot jerk load, thus reducing danger of parting rods or breaking cable.
Permits wide range of speeds—7 forward—7 reverse—so operator can increase speed as load decreases.
Reduces time for pulling well and increases production.
Simplifies construction—less parts, fewer repairs—easier handled.

ROCK ISLAND P. U. 51
25 Horse Power

Operates on natural gas or gasoline. Complete control from well platform.

"Built for the job—Sold on performance"

There are many other reasons why the Rock Island 4-Cylinder Pumping Engine equipped with Friction Transmission will operate your wells requiring less attention from operator, less repairs, fuel and oil. Our catalog describing this machine in detail sent on request.

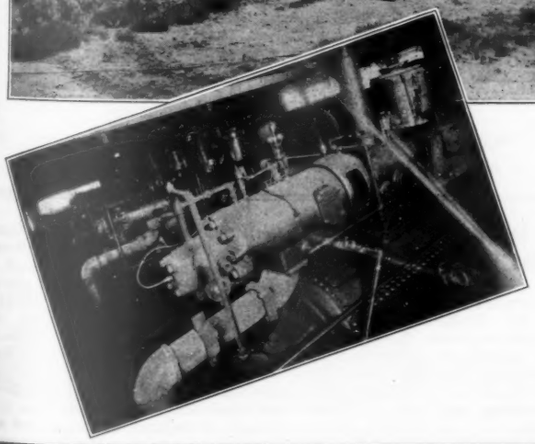
Manufactured by

ROCK ISLAND PLOW COMPANY, ROCK ISLAND, ILLINOIS

P. O. Box No. 289 C. F. CAMP AGENCY, DISTRIBUTORS, TULSA, OKLAHOMA 311 Atco Bldg.

1

ENOUGH EQUIPMENT TO DO THE JOB RIGHT



Right now deliveries are prompt and prices low. Send your requirements for quotation.

ERECTING tanks in the field, as GRAVER builds them, requires compressed air and lots of it.

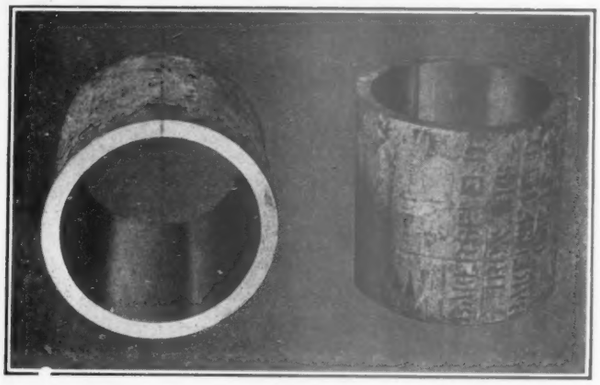
To keep the riveters and hoists going at Casper, GRAVER built a power house equipped with six heavy duty compressors — more equipment than some builders have in their shops.

Standardized sizes and complete erection equipment has established GRAVER as a foremost builder of all kinds of oil storage.

GRAVER *Corporation*

(WM. GRAVER TANK WORKS · FOUNDED 1857)

Steel Tanks and General Steel Plate Construction
Water Softening and Purifying Equipment



Short Lengths of Larger Sized Seamless Tubing

Short Heavy Wall Headers for Oil Refineries

Tubing in Short Lengths for Roller Bearing Racers

When tube requirements for refinery are unusual, the Wm. Wharton, Jr. & Co., Inc., is in position to serve you.

The experience of our several plants in the manufacture of forgings, and special tubes in short lengths to fit unusual conditions, etc., is at your command.

When you are in need of such things, or when you are confronted with any special problem in connection with refinery equipment, we solicit your inquiry.

Wm. Wharton, Jr. & Co., Inc.

(Founded 1859)

30 Church St., New York, U. S. A.

Cable, Wilwharton, New York

EASTERN REFINED MARKET QUIET; OIL FOR HOUSE HEATING ENDORSED

By N. O. Fanning

NEW YORK, Dec. 10.—The past week has witnessed a somewhat quieter market for refined oil products. With winter here, refiners are slowing down operations somewhat, so that December should bring with it smaller production, especially of gasoline. It is understood that refineries in the Baltimore district are being partially shut down, while Philadelphia plants are running on a somewhat smaller scale.

The situation seems to be that Atlantic Coast refiners as a whole feel well stocked up with practically all products at their plants now. Winter will bring an inevitable decline in consumption of gasoline, and the export market is expected to show a decline also. Even with a drop in refinery production, refiners should be able to add to stocks sufficiently to prepare for a gain in consumption next spring.

As to the price structure of gasoline, the feeling is becoming quite general that the bottom has been reached and the next move will be upward. Possibly there will be a gain in gasoline prices and a drop in kerosene, furnace oil and fuel oil, although changes are expected to be slight. The smaller independents are not so anxious to unload their production at ruinous prices now as they were several weeks ago, in as much as there is a prospect of all around improvement in the near future. This is reflected in a scarcity of tank car offerings in this territory.

The oil business is looking forward to a good year in 1924, but in back of the hope for improvement is the belief on the part of the conservative members of the trade that runaway prices would do more harm than good to the business in the end. A reasonable advance in prices, on the other hand, would put the oil business on a profitable basis and at the same time would not cause discontent on the part of domestic and foreign consumers.

Furnace Oil Movement

Enthusiastic endorsement of oil as the future fuel for convenient house heating and the formulation of plans looking toward the full cooperation between oil producers, burner manufacturers, architects, builders, combustion engineers and the American home owner were the outgrowth of a meeting held in New York yesterday, which was attended by approximately 200 experts in these lines.

Among the speakers were representatives of the Standard Oil Co. of New York, who stated that in this new industry, which promises to grow so fast, it would be too bad if a very natural mistake were made. "This natural mistake," one said, "is for some burner manufacture to provide too small a storage tank for oil when installing equipment." He urged that adequate storage facilities be arranged for each installation so that the cost of delivery will be small and will not have to be added to the cost of oil burned by the producer of the equipment.

Henry L. Doherty, one of the leaders of the movement in the East, made an address in which he said that there are now in use an average of more than 1,000,000 bbls. of oil a day for fuel purposes. "Much, if not all, of this oil is used more or less in competition with coal and where its use to other users is not of as great value as its use would be to the household user, therefore, as the house owners of the country demand more and more oil for house heating purposes, a slight raise in price will drive more and more of these other fuel oil users to other and cheaper forms of fuel, making available a corresponding amount of oil for house heating purposes."

Mr. Doherty also pointed out that there are nearly 15,000,000 motor cars in use in this country and yet the same people who say that the public cannot afford to heat their homes with oil would have said 20 years ago that not to exceed 500,000 people in this country could have afforded to have had a motor car. "Perhaps these people can or cannot afford a motor car, but, nevertheless, they do afford a motor car and the motor car in many ways is much more of a luxury and much more expensive relatively than heating a house with oil," he said.

At the close of the meeting a resolution was adopted calling for the appointment by the chairman, A. J. Squiers, of the Warren Lubricant Co., of a committee of seven, which, after deliberation and consideration, will choose a name for a new association to gather together data and information and to have as one of its principal objects the cooperation between burner manufacturers, petroleum producers, American home owners and all others interested in this new industry.

Oil Receipts Maintained

Receipts of crude and refined oil by water at Atlantic ports during the week ended December 7 averaged 443,000 bbls. daily, against 455,000 bbls. daily the week before, a drop of 12,000 bbls. Continued small receipts at Baltimore was the feature of the movement. New York receipts averaged 223,000 bbls. daily, or approximately 50 per cent of the total.

The following table shows the estimated daily average receipts of crude and refined oil by water at the principal Atlantic Coast ports for the last two weeks, and for the months of November and October, 1923, (in barrels):

	Week Ended		Month	
	Dec. 7	Nov. 30	Nov.	Oct.
New York	223,000	218,000	215,000	236,000
Philadelphia	95,000	92,000	96,000	109,000
Baltimore	13,000	11,000	28,000	41,000
Boston	45,000	18,000	24,000	26,000
Fall River	11,000	31,000	9,000	18,000
Providence	24,000	11,000	13,000	17,000
Norfolk	11,000	21,000	12,000	9,000
Charleston	.....	35,000	11,000	11,000
Miscellaneous	21,000	18,000	29,000	31,000
Total daily average	443,000	455,000	436,000	498,000

Mexican crude oil market remains unchanged.

FREEING DISTILLATES FROM WAX NEW WAY

A British patent has recently been granted to the Whitehall Petroleum Corp., Ltd., Westminster, London, for an invention relating to a method by which hydrocarbons resulting from the distillation of crude oil or other hydrocarbons containing wax, can be freed from such wax.

The present methods employed for the treatment of such oils consist in subjecting the distillates to a low temperature and separating the wax from the oil by passing the cold oil through filter presses, but the application of this process presupposes that all of the wax will be in a crystalline modification. If the wax is contained in those hydrocarbons in an amorphous condition, as, for instance, in the residuum obtained by the distillation of crude oil of paraffin base, the oil is diluted with more than its own volume of naphtha and subjected to the freezing process and the wax separated by settling, or by the aid of a centrifuge.

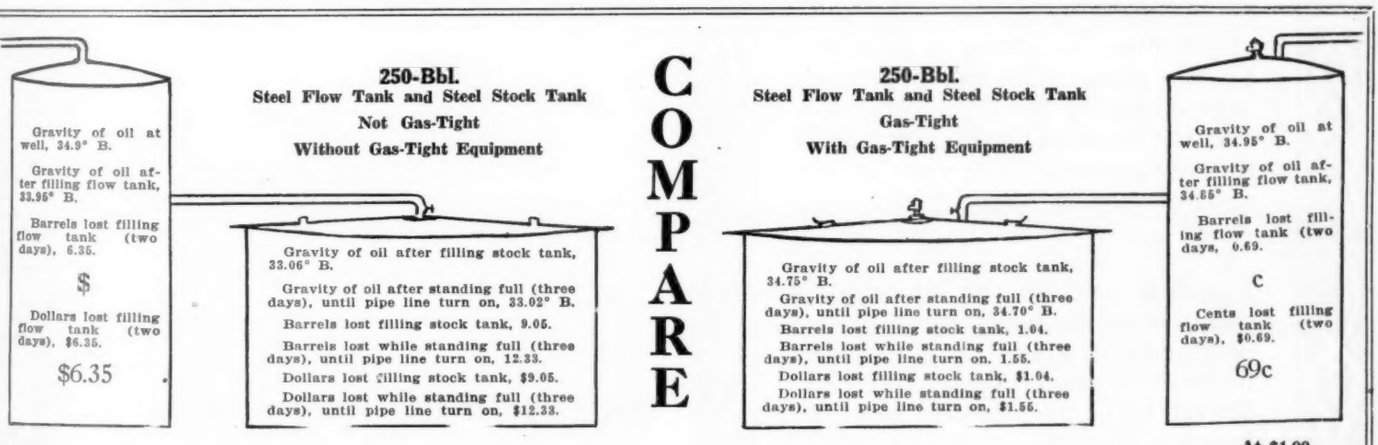
LEIDECKER 3000-FOOT DRILLING MACHINE WITH CALF WHEEL

We manufacture Machines for drilling any depth from 500 feet to 3500 feet.

Catalog sent upon request.

THE LEIDECKER TOOL COMPANY, Marietta, Ohio

Branch Stores and Shops: Bartlesville, Okla.; Basin, Wyo.; Casper, Wyo.


Gravity of oil at well, 34.9° B.
Gravity of oil after filling flow tank, 33.95° B.
Barrels lost filling flow tank (two days), 6.35.
$
Dollars lost filling flow tank (two days), $6.35.
$6.35
250-Bbl. Steel Flow Tank and Steel Stock Tank Not Gas-Tight Without Gas-Tight Equipment
Gravity of oil after filling stock tank, 33.06° B.
Gravity of oil after standing full (three days), until pipe line turn on, 33.02° B.
Barrels lost filling stock tank, 9.05.
Barrels lost while standing full (three days), until pipe line turn on, 12.33.
Dollars lost filling stock tank, $9.05.
Dollars lost while standing full (three days), until pipe line turn on, $12.33.
COMPARE
250-Bbl. Steel Flow Tank and Steel Stock Tank Gas-Tight With Gas-Tight Equipment
Gravity of oil after filling stock tank, 34.75° B.
Gravity of oil after standing full (three days), until pipe line turn on, 34.70° B.
Barrels lost filling stock tank, 1.04.
Barrels lost while standing full (three days), until pipe line turn on, 1.55.
Dollars lost filling stock tank, $1.04.
Dollars lost while standing full (three days), until pipe line turn on, $1.55.
Gravity of oil at well, 34.95° B.
Gravity of oil after filling flow tank, 34.55° B.
Barrels lost filling flow tank (two days), 0.69.
c
Cents lost filling flow tank (two days), $0.69.
69c

	Barrels	Gravity	At $1.00 Per Bbl.
Loss Using Steel Tanks—"NOT GAS-TIGHT"—"WITHOUT" GAS-TIGHT EQUIPMENT	27.73	1.88°B	$27.73
Loss Using Steel Tanks—"GAS-TIGHT"—"WITH" GAS-TIGHT EQUIPMENT	3.28	.25°B	3.28
SAVED Using Steel Tanks—"GAS-TIGHT"—"WITH" GAS-TIGHT EQUIPMENT	**24.45**	**1.63°B**	**$24.45**

"Save the Difference" —*By Using* "GAS-TITE DEVICES"

Gas-Tite Man-Hole Ring and Cover with Automatic Pressure and Vacuum Device attached

Statistics used in this advertisement taken from reports of investigations, Bureau of Mines, Department of the Interior, Serial No. 2442, February, 1923. By Ludwig G. Schmidt, Asst. Pet. Eng., Bureau of Mines.

For further information and prices address

THE GAS-TITE DEVICE CO.

PAWHUSKA, OKLA.

"Gas-Tite" Thief-Hole Ring and Cover

REPUBLIC

Republic Pipe Conveys Texaco Crude

Running out of Louann, Ark., and extending to Ardis, La., a distance of 100 miles, is a string of Republic 10″ line pipe. This line is now being completed for The Texas Co. and will convey Texaco crude to the refinery base. The view shown above was made while the line was being laid in the open country.

Republic pipe for the oil country supplies a demand required by big producers in all of the important fields in this and foreign countries. Republic is stamped in every length. Republic stands back of every foot.

Quotations by return mail.

Tubing—Casing—Line—Drive Rotary Drill Pipe

REPUBLIC IRON & STEEL CO.

General Offices:

Republic Bldg., Youngstown, Ohio

SALES OFFICES:

Buffalo	**New York**	**Cincinnati**	**Dallas**
Boston	**San Francisco**	**Pittsburgh**	**Detroit**
St. Louis	**Philadelphia**	**Cleveland**	**Chicago**
			Birmingham

CASINGHEAD PLANTS ADD TO REVENUE OF BUSINESS

(Continued from Page 74)

inclined to stand off a little. Will the manufacturer agree to maintain vacuum on the wells at such time as they may need it? The manufacturer will. He wants the gas and is apt to see it go to another plant if he does not agree to vacuum service. So he saves the lease owner not only an initial cost of several thousands of dollars for vacuum equipment, but also the continuous cost of vacuum operation. In addition he pays a good price for the gas. With free vacuum and fuel gas and a revenue besides, it may well be said that the lease owner is "settin' purty," with a gasoline plant as his cushion.

Yet it cannot be proclaimed that his gratitude is excessive. If the vacuum on his more distant wells should be off a point or two, or if, on a bitter winter morning, the fuel gas pressure should fall sufficiently to make harder the starting of a power engine, the plant superintendent is called at once. His office telephone is clamorous. In the Chelsea-Nowata Field in Oklahoma, where the Tidal operates two large gasoline plants connected with over 3,000 oil wells by about 400 miles of pipe lines, and maintains, besides, 70 plants for vacuum service, it may be imagined that the superintendent and his force have work to do to keep the producers happy. This is true particularly in the winter, when lines freeze up, and in the spring, on several occasions, the river has become a far-reaching lake, and the men have cruised about the plant in boats. The 400 miles of line must be kept as gas-tight and air-tight as possible to maintain the vacuums and prevent the loss of fuel gas. Also, many hundreds of gas meters must be kept in order so that the company may not pay too much or too little for the gas. While these remarks have been based specifically on the situation in the Nowata-Chelsea Field, they apply in greater or less degree to the Burkburnett, Tex., field, to Glenpool and some other regions in which there are Tidal gasoline plants.

Middle-Aged Fields

In what might be called middle-aged fields, as distinguished from the old ones, the wells lean less upon the gasoline plants. Though a great many of them depend upon the plants for vacuum, their own supplies of gas are usually large enough for fuel, and the value of the plants, from the producers' viewpoint, lies mainly in the market provided for casinghead gas, which passed into the air, or was burned in flambeaux, throughout the oil industry's first half century. In a representative field which has reached the age of about five years, for instance, the average well delivers daily around 5,000 feet of gas, each thousand feet of which carries about three gallons of gasoline, giving the average well a gasoline production of about 15 gallons a day. Sold in carloads for as much as the manufacturer has been able to realize over the year in the markets since 1920, the gross value of the gasoline from the average well is something over $600 a year. Of this, under most contracts, the producer receives one-third as purchase money for his gas. The contribution per well to company coffers may not seem impressive, but when it is remembered that some of the larger companies are operating thousands of wells producing casinghead gas, it will be seen that the emoluments are substantial.

But while some very rough averages have been suggested, each field must be judged by itself alone. That in Kansas known as the Fox-Bush Pool, where the Tidal has a large gasoline plant, has passed its first youth, yet individual wells are still delivering big volumes of gas, with an average gasoline contribution per well of about 45 gallons daily.

New Fields and Wells

New fields and new wells permit of few generalizations as to natural gasoline production. A flush well may be making a million feet of gas today and less than a hundred thousand feet three months hence. Usually this flush gas carries comparatively little gasoline. A half a gallon to the thousand feet is probably above the average at the start. But you can never tell. A certain well tested by the Tidal was producing when a month old 4,500,000 feet of gas with a gasoline content of a gallon and a half a thousand. In other words, the well was daily blowing into the air nearly 7,000 gallons of gasoline. While this well is probably unique in gasoline production, there are many new ones in Oklahoma and Texas that yield great quantities of gasoline to the atmosphere. The man who devises a process whereby their gasoline can be saved from the air while they are smoking and roaring in the first flush of existence will do well for himself and for the industry.

As it is, the gasoline manufacturer must wait until wells settle down. If they installed plants to take care of initial gas outpourings, they would find their equipment, within a few months, much greater than the requirements for the declining volumes. So the gasoline in the gas soars upward for a while. When the wells have become old enough to give clues as to what extent they can be depended upon, the gasoline man, giving careful consideration to numerous factors, makes his estimates and begins the installation of a plant. For two to six months are necessary for completion. At least a year in all is likely to pass before the casinghead gas in a new field is being conducted to machinery to be separated from its natural gasoline. In the meantime, many millions of gallons have been carried away on the breeze.

MID-CONTINENT REFINERS REPORT SLIGHT DECREASE IN CRUDE RUNS

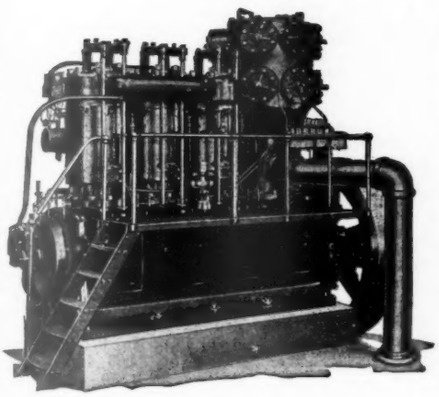
There was a slight decrease in the crude runs to the stills of Mid-Continent refiners for the week ending December 1, according to the weekly report of the Western Petroleum Refiners' Association, Tulsa. Kerosene output increased while output of gasoline and gas and fuel oil decreased. Gasoline stocks were decreased while stocks of both kerosene and gas and fuel oil were slightly increased.

The following statement covering 127 reporting refineries for the week ending 7 a. m., December 1, 1923, gives the principal features of the report:

	Kansas	Oklahoma	Texas	La.-Ark.	Total
Number of refineries reporting	23	55	38	11	127
Daily capacity of stills (barrels)	80,900	250,000	127,350	23,100	481,350
Materials for stills (barrels)—					
Crude oil, item A	299,059	755,455	527,493	84,067	1,666,074
Other oils (see note) item B	25,380	132,939	175,993	15,824	350,136
Total	324,439	888,394	703,486	99,891	2,016,210
Output of finished products (gals.)—					
Gasoline, item C	4,442,398	11,371,592	5,026,948	944,932	21,785,870
Kerosene, item D	1,497,146	4,168,141	2,508,584	337,872	8,511,743
Gas and fuel oil, item E	6,912,482	12,602,195	11,655,316	1,777,614	32,947,607
Stocks on Hand at Close of Week:					
Materials for stills (barrels)—					
Crude oil, item J	538,506	4,329,232	887,739	923,972	6,679,449
Other oils (see note), item K	23,800	965,049	326,170	512,388	1,827,407
Finished products (gallons)—					
Gasoline, item L	6,188,129	62,010,556	28,898,162	1,533,249	98,630,096
Kerosene, item M	2,407,829	9,643,627	9,030,532	261,374	21,343,362
Gas and fuel oil, item N	10,277,324	52,740,534	44,218,306	2,787,795	110,023,959

Note: Other oils includes all oils other than crude which are either purchased or withdrawn from stocks and run to stills during the week. The total of items A and B is, therefore, the net quantity of materials consumed by the reporting refineries in producing the quantities of products shown as the result of the operation of the refineries during the week. Item K includes all stocks of oils, other than crude, held for further refining.

The Reeves Vertical Gas Engine—Compressors For Gas Booster Plants



Engine Sizes:
40 H. P. up to 250 H. P.

Engine-Compressor Sizes:
60 H. P. up to 160 H. P.

A few of the reasons why leading companies and engineers are purchasing the Reeves Gas Engines and Compressors.

They know the Reeves unit is not an experiment, having proven its reliability and worth over a period of about twenty years successful service.

Account of the simplicity of operation; low fuel and maintenance cost per horse power. One user just reported having operated last four units 16 months without shutdown.

All Compressors equipped with "Hope" Biplane, Patented, easy operating, high speed Valves.

Saving in installation time partly pays for unit.

Saving in plant construction cost from 20 to 50%, depending on location.

Branches Pittsburgh, Penna. Tulsa, Okla. Casper, Wyo

HOPE ENGINEERING & SUPPLY CO.
Mt. Vernon, Ohio, U.S.A.

Consulting and Contracting Engineers in Natural Gas and Oil.

DAYLIGHT!

DELTA

NO. 10 ELECTRIC HAND LANTERN

FOR NIGHT USE!

" The Light of the Nation."

$2.75 COMPLETE Less Batteries

DELTA ELECTRIC COMPANY

Factory and General Offices, 110 Delta Block, Marion, Ind.

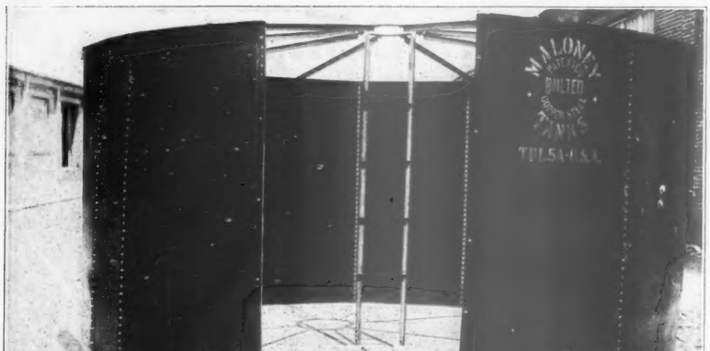
Standard Makers of Auto Spotlights, Electric Lanterns, Radio Headphones, Bicycle Lamps, Flashlights and Flashlight Batteries

NEW YORK CITY
Export Dept.
30 Water St.

SAN FRANCISCO
Sanford Bros.
311 Minna St.

WINNIPEG
Bisset & Webb, Ltd.
126 Lombard St.

Made of KEYSTONE COPPER-STEEL



Section Removed From 250-Bbl. Tank

Cleaning Out Plate Flush With Bottom

Blank Plate

The MALONEY Cleaning Out Plate has been a feature since our tank's inception and has been widely imitated.

The plate is taken off and replaced from the outside of the tank, and when taken off the opening is flush with the bottom, there being no rim for scraper to catch on.

The tank can be easily and quickly cleaned out without the workman getting inside.

The plate has our patented offsets and when replaced with gasket gives an exact and tight fit without calking.

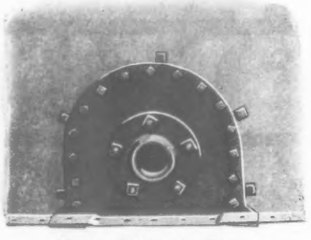


Plate Bolted to Stave

Ask for Catalog C, covering the many advantages of this superior tank.

Maloney Tank Mfg. Co.
Offices and Factory: Tulsa, U. S. A.

60 to 3,000 Bbls., Inclusive

Prompt, Dependable Export Service

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MALONEY
MALONEY

NORTH CENTRAL TEXAS

(Continued from Page 48)

Wilson, standardizing on top of an oil sand at 1,400 feet; Featherstone and other's No. 3-B Wilson, testing a sand at 1,580 feet; No. 3-C Wilson, drilling at 1,100 feet; No. 1 Egbert, will pump and gauge this week; Gatewood and others' No. 1 Boone, drilling in hard rock at 2,090 feet; Gwynn and others' No. 5 Carter, drilling in blue shale at 1,340 feet; Hardeyste and others' No. 1 Parrish, coring and testing a sand showing oil at 1,606 feet; Kentucky Oil Corp.'s No. 2 Wilson, bailing and testing an oil sand at 1,390 feet; No. 1 Wilson, drilling at 1,605 feet; Lynch and others' No. 1 Birdwell, has water trouble at 1,320 feet; Maer and others' No. 1 Wilson, drilling at 1,465 feet; No. 7 Mrs. Carter, at 155 feet; Morris and others' No. 1 Wilson, bailing and testing a sand at 1,600 feet; Moore and others' No. 1 Wilson, drilling at 1,595 feet; Norton and others No. 1 O'Connel, casing trouble at 1,275 feet; Oil Investment Co.'s No. 3-B Parrish, bailing and testing a sand showing oil at 1,595 feet; Pace and others' No. 1 Ford, drilling at 1,195 feet; Payne and others' No. 1 Parrish, drilling in brown shale at 1,205 feet; Riner and others' No. 2 Wilson, drilling at 1,245 feet; 66 Oil Co.'s No. 4 Wilson, at 1,155 feet; No. 5 Wilson, testing a sand at 1,590 feet; Thomas and others' No. 1 Ford, drilling at 1,145 feet; Sun Oil Co.'s No. 3 Farmer, repairing the boiler and will drill deeper at 1,105 feet; Sunshine State Oil & Refining Co.'s No. 11 Carter Bros., testing an oil sand at 1,575 feet; No. 12 Carter Bros., drilling in brown shale at 1,565 feet; No. 13 Carter Bros., drilling at 1,505 feet; The Texas Co.'s No. 9 Carter Bros., drilling in rock at 1,335 feet; Swastika Oil Co.'s No. 1 Neal, shut down for cable tools at 2,950 feet; Underwood Drilling Co.'s No. 1 Wilson, drilling at 405 feet; Dr. Wallace No. 16 K. & K., ratholing at 1,710 feet; Williams and others' No. 1 Wilson, drilling at 1,575 feet.

List of Derricks

The following is the list of derricks in Archer County: Armstrong and others' No. 1 Martini, Bohler and others' No. 1 Wilson, Bridwell and others' No. 1 Wilson, Camp Oil & Gas Co.'s No. 5 Wilmot, No. 2 Wilson, Dorain and others' No. 1 Wilson, Featherstone and others' No. 7-C Wilson, Graham and others' No. 1 Wilson, Gould and others' No. 2 White, Jetter and others' No. 2 Wilson, King and others' No. 1 Ground, Larkin and others' No. 1 Nelson, Murchison and others' No. 1 Wilson, the Oil Investment Co.'s No. 4-B Parrish, Riner and others' No. 1 Wilson, R. M. V. Oil Co.'s No. 1 Wilson, Shamrock Oil Co.'s No. 3 Richardson and No 1-B Richardson, Stewart and others' No. 1 Helm; Sunshine State O. & R. Co.'s No. 5 Carter Bros., No. 14 Carter Bros. and No. 2 Parrish; Underwood Drilling Co.'s No. 3 Wilmot, Wall-Duke Oil Co.'s No. 1 Garvey, White Oil Corp.'s No. 1 Wilson.

Young County Completions

Completions—Calmo Oil Co.'s No. 3 Moren, 200 bbls. at 2,870 feet; Seaboard Oil & Gas Co.'s No. 4-A Hughes, 75 bbls. at 2,580 feet.

Drilling—Bullington and others' No. 1 Campbell, is a machine on the ground; Byrens and others' No. 1 Mahoney, running 5 7/16-inch casing at 3,933 feet; Gulf Production Co.'s No. 2 Hockaway, drilling by tools at 3,305 feet; No. 1-A Hockaday, has 1,000 feet of oil in the hole and drilling in a sand at 4,100 feet; Harrown and others' No. 1 Vick, drilling at 180 feet; Logan and others' No. 1 Wild, drilling at 305 feet; McGuire and others' No. 1 Carter, fishing for casing at 1,875 feet; McKenzie and others' No. 1 Logan, drilling at 345 feet; Mann and others No. 5 Whittenberg, spudding; Mid-Kansas Oil & Gas Co.'s No. 1 Gibson has 1,000 feet of oil in the hole from a lime at 3,750 feet; No. 1 Moren, drilling in blue shale at 1,865 feet; Nash and others' No. 1-B Williams, drilling at 2,300 feet; North American Refining Co.'s No. 1-B Scott, cleaning out, will drill deeper at 3,800 feet; Shamrock Oil Co.'s No. 3-A Bower, drilling at 1,120 feet; Snowden and others' No. 1 Carter, underreaming 8¼-inch casing at 1,870 feet; Whitehead and others' No. 1 Graham, drilling at 880 feet in brown shale; No. 1 Johnson, running 6⅝-inch casing at 4,229 feet.

Stephens County

Completions—Magnolia Petroleum Co.'s No. 12 McCauley, 95 bbls. at 3,245 feet; Texas Pacific Coal & Oil Co.'s No. 48 Binney, 75 bbls. at 1,825 feet.

Drilling—Cox Consolidated Oil Co.'s No. 1 Corbett, dry at 4,340 feet, will probably be plugged and abandoned; Critten and others' No. 1 Cobb, showing 100 bbls. of oil and 4,000,000 feet of gas and drilling at 3,275 feet; Mid-Kansas Oil & Gas Co.'s No. 2 Gouger, fishing job at 3,150 feet; McClain and others' No. 1 Hill, set 5-inch casing and cleaning out before drilling deeper at 3,730 feet; Pierce and others' No. 1 Cruddington, hole full of water and drilling at 705 feet; Texas Consolidated Oil Co.'s No. 3 Martin, bailed 6 bbls. of oil and some water and shut down at 4,000 feet; Weekly Petroleum Co.'s No. 2 Martin, drilling in lime at 3,835 feet; Corts and others' No. 1 Corts, cleaning out and will drill deeper at 3,920 feet; Graham and others' No. 1 Sanders, spudding; Magnolia Petroleum Co.'s No. 4 Brown, drilling with a hole full of water at 3,410 feet; No. 12 Rush, running 5-inch casing at 3,065 feet; No. 4 Walker, drilling at 2,850 feet; Mahlstedt-Mood Oil Co.'s No. 1 Boyett, underreaming 5-inch casing at 3,175 feet; Prairie Oil & Gas Co.'s No. 1-B Brown, pulling casing to plug at 3,380 feet. Price and others' No. 2 Bruce, drilling in soft rock at 955 feet; Qualey and others' No. 1 Bradford, spudding; Roeser and Pendleton's No. 5 Jones, drilling at 1,325 feet; Scott and others' No. 2 Davis, drilling at 305 feet; Sinclair Oil & Gas Co.'s No. 5 Henderson, drilling at 955 feet; Texas Pacific Coal & Oil Co.'s No. 3 Ashmore, sand at 2,090 feet; showing both oil and gas and drilling at 2,165 feet; No. 1 Lee, starting to drill at 1,660 feet.

Eastland County

Drilling — Ablon and others' No. 1 Collins, drilling at 3,415 feet; Harrell and others' No. 1 Mahan, drilling in gray lime at 3,000 feet; Humble Oil & Refining Co.'s No. 4 Merrill, drilling in soft rock at 900 feet; Knox-Lewis Oil Co.'s No. 2 Edison, drilling at 400 feet; Magnolia Petroleum Co.'s No. 4 Ross, spudding; No. 14 Westmoreland, drilling just above production depth at 2,875 feet, Panhandle Refining Co.'s No. 5 Webb, drilling at 1,100 feet; Clayton and Turner's No. 1 Rio Bravo, setting casing at 2,200 feet; Daugherty and others' No. 1 Johnson, cleaning out at 1,600 feet; Rosenfield and others' No. 1 Brunett, fishing for casing at 2,110 feet; Stovall and others' No. 1 Ray, drilling in brown shale at 2,050 feet; Texas Development Co.'s No. 1 Lewis, fishing for casing at 1,850 feet; Prairie Oil & Gas Co.'s No. 5-A Brooks, preparing to drill into a sand showing some oil at 2,250 feet.

Wildcats

Mitchell County: Completions—Sloan and others' No. 1 O'Neil, 150 bbls. at 3,110 feet; California Oil Co.'s No. 3 Morrison, 150 bbls. at 3,105 feet.

Drilling—Carey and others' No. 1 Morrison, timbers; Kelsay and others' No. 1 Badgett, cleaning out after a shot at 3,120 feet; Sloan and others' No. 1 Smart, drilling at 1,505 feet.

Shackelford County: Drilling—Humble Oil & Refining Co.'s No. 1 Elliott, running 10-inch casing at 1,615 feet; No. 1 Jackson, drilling at 2,490 feet; No. 1-E Poindexter, drilling at 1,905 feet; Landreth Oil Co.'s No. 2 Lynch, fishing for casing at 3,385 feet; Texhoma Oil & Refining Co.'s No. 2 Black, running 6-inch casing at 2,600 feet.

Palo Pinto County: Drilling—Republic Oil Co.'s No. 1 Stuart, had a gas sand at 2,450 feet and drilled at 2,605 feet; Texas & Pacific Coal & Oil Co.'s No. 1 Robinson, drilling by tools at 3,480 feet; No. 44 Stuart, fishing for casing at 1,694 feet; Thomas and others' No. 1 Thomas, fishing for tools at 3,200 feet; Hess and others' No. 1 Cropper,

drilling at 400 feet; Jones and others' No. 1 Jones, drilling at 1,645 feet; Nelson and others' No. 2 Finch, cleaning out at 4,150 feet; Simms Oil Co.'s No. 1 Costello, shut down for 6-inch casing on top of a black lime at 3,400 feet; Zada Belle Oil Co.'s No. 1 Weldon, drilling at 3,185 feet.

Callahan County: Completions—Curtis and others' No. 1 Hayden, dry at 460 feet.

Coleman County: Completions—Caldwell and others' No. 1 Shields, dry at 400 feet.

Baylor County: Drilling — Waggoner and others' No. 1 Portwood, drilling at 1,600 feet.

Clay County: Completions—Knox and Finley Development Co.'s No. 1 Scott, 8 bbls. at 1,150 feet.

Drilling—Crude Oil Production Co.'s No. 1 Kinder, drilling in blue shale at 1,015 feet; Gulf Production Co.'s No. 1-A Boddy, drilling at 2,710 feet; No. 3 Worsham, drilling at 585 feet; Nebraska Oil & Gas Co.'s No. 1 Martin, drilling without any showing at 3,290 feet; Moore and others' No. 1 Hull, drilling in brown shale at 1,235 feet.

Montague County: Drilling—The Texas Co.'s No. 1-A Gist, lubricating off gas at 850 feet; Gulf Production Co.'s No. 1-A Benton, drilling in rock at 2,710 feet; Mascho Oil Co.'s No. 1 Howard, drilling in mud at 1,825 feet.

Armstrong County: Drilling — Magnolia Petroleum Co.'s No. 1 J. A. Ranch, drilling in lime and shale at 3,205 feet.

Carson County: Drilling—Texas Co.'s No. 3 Burnett has a hole full of water and drilling in gyp at 355 feet; Gulf Production Co.'s No. 3-A Burnett, fishing for pipe at 3,145 feet; Humphries Oil Co.'s No. 1 Sandford, fishing for tools at 2,530 feet; Silk and others' No. 3 Burnett, drilling in red beds at 605 feet.

Collingsworth County: Drilling—Campbell and others' No. 1 Stokley is cleaning out at 1,680 feet.

Dallam County: Drilling—Kellerman and others' No. 1 James, drilling by junk at 1,640 feet.

Gray County: Drilling—Holmes and others' No. 1 Warren, underreaming 12½-inch casing at 900 feet; The Texas Co.'s No. 1 Saunders, drilling in lime at 1,995 feet.

Hemphill County: Drilling—Piney Oil Co.'s No. 1 Hopkins, drilling lime shells and shale at 4,715 feet.

Hutchinson County: Drilling—Coline Oil Co.'s No. 1 Sandford, drilling at 3,185 feet; Humphries Oil Co.'s No. 1 Johnson, drilling by a bit at 2,585 feet; Montgomery and others' No. 1 Johnson, running 10-inch casing at 1,760 feet; McGee and others' No. 1 Smith Capers, cleaning out at 3,175 feet; Producers & Refiners Corp.'s No. 1-B Bivens, drilling in red beds at 925 feet.

Potter County: Drilling—Producers & Refiners Corp.'s No. 2 Masterson, drilling in black rock at 2,907 feet; No. 2-A Masterson, underreaming 12½-inch casing at 1,100 feet.

PRODUCTION REPORT

Week Ending December 6, 1923

Burkburnett	
American Refining Co.	250
Barkley & Meadows	2,100
Humble Oil & Ref. Co.	695
Gulf Production Co.	1,800
Magnolia Petroleum Co.	3,690
Middle States Oil Co.	245
McMahon Oil Co.	425
Panhandle Refining Co.	460
Sinclair Oil & Gas Co.	45
The Texas Co.	640
Texhoma Oil & Ref. Co.	605
Miscellaneous	12,240
Total	23,195
Electra	
Empire Gas & Fuel Co.	1,610
Humble Oil & Ref. Co.	130
Griswold Oil Co.	500
Gulf Production Co.	975
Magnolia Petroleum Co.	5,070
Middle States Oil Co.	120
McMahon Oil Co.	200
The Texas Co.	5,365
Texhoma Oil & Ref. Co.	2,410
Miscellaneous	5,900
Total	22,280
Iowa Park, Etc.	
American Refining Co.	40
Griswold Oil Co.	30
Gulf Production Co.	60
Texhoma Oil & Ref. Co.	45
Miscellaneous	1,990
Archer County—	
American Refining Co.	270
Griswold Oil Co.	515
Gulf Production Co.	380
Humble Oil & Ref. Co.	130
The Texas Co.	905
Texhoma Oil & Ref. Co.	1,900
Miscellaneous	14,515
Petrolia—	
Gulf Production Co.	120
Magnolia Petroleum Co.	50
The Texas Co.	90
Miscellaneous	190
Total	21,230
Stephens County	
Empire Gas & Fuel Co.	90
Gulf Production Co.	1,620
Humble Oil & Ref. Co.	2,015
Magnolia Petroleum Co.	1,010
Mid-Kansas Oil & Gas Co.	1,810
Prairie Oil & Gas Co.	1,025
Sinclair Oil Co.	315
The Sun Co.	830
The Texas Co.	3,035
T. & P. Coal & Oil Co.	1,285
Miscellaneous	10,715
Total	23,750
Eastland County	
Gulf Production Co.	690
Humble Oil & Ref. Co.	115
Magnolia Petroleum Co.	580
Panhandle Refining Co.	450
Prairie Oil & Gas Co.	915
Sinclair Oil Co.	530
The Texas Co.	210
Texas & Pacific Coal & Oil Co.	1,090
Miscellaneous	2,530
Total	7,110
Other Fields	
Strawn—	
T. & P. Coal & Oil Co.	315
Miscellaneous	565
Moran—	
Empire Gas & Fuel Co.	180
Humble Oil & Ref. Co.	620
The Texas Co.	155
Texhoma Oil & Ref. Co.	230
Miscellaneous	2,755
Coleman County—	
Miscellaneous	230
Brown County—	
Miscellaneous	680
Comanche-Eastland—	
Humble Oil & Ref. Co.	345
Magnolia Petroleum Co.	1,245
Prairie Oil & Gas Co.	455
Sinclair Oil & Gas Co.	70
The Texas Co.	430
T. & P. Coal & Oil Co.	205
Miscellaneous	5,115
Young County—	
Gulf Production Co.	130
North American Ref. Co.	160
Sinclair Oil & Gas Co.	470
Oklahoma Petroleum & Gas Co.	80
Panhandle Refining Co.	375
The Texas Co.	140
Miscellaneous	3,500
Mitchell County	1,025
Reagan County	150
Jack County	30
Total	19,655
Total all fields	117,220
Total last week	115,475
Gain	1,745

W. KENTUCKY-TENN.

(Continued from Page 56)

Due to inclement weather, little work was accomplished in Warren County Field. In the Penner district, southeast of the northeast extension area, J. J. Fort got a 2-bbl. stripper in No. 2 Wick White at about 430 feet. Two miles and a half from Smith's Grove, near Rocky Hill, C. E. Hayworth got a 5-bbl. pumper in No. 1 on the Will Hudson farm after shooting at 585 feet.

Waller-Runner district—E. M. Treat & Co.'s No. 15 Sebe Smith is on top of the sand; No. 16, drilling at 430 feet; Plantation Consolidated Development Co.'s No. 11 W. A. Gott, drilling at 360 feet; Ohio Fuel Oil Co.'s No. 14 W. A. Gott 100 acres, drilling at 720 feet; Wood River Oil Corp. shut down at 50 feet on the Rufus Oliver farm.

Sandidge district—Makeever Bros. No. 3 Higginbotham, drilling 12 feet in the sand; G. W. Pyle's No. 1 Watkins, awaiting shot in the deep sand; G. C. Foster's No. 4 C. E. Francis, making hole at 350 feet; White & Foster's No. 1 Wood, spudding at 30 feet; F. W. Evans' No. 1 Arch McGinnis, drilling at 360 feet; Reed's No. 1 Montague, still shut down at 240 feet; Banon & Stewart's No. 3 Anna Shield, drilling at 442 feet; Cunningham and others' No. 1 Elkins, at Riverside, on top of the sand.

Rockfield section—C. L. Turner & Co.'s No. 3 McLemore, shut down at 450 feet; Jackson Oil Co.'s No. 4 Jim Jones, drilling at 690 feet; Gillespie Oil Co.'s No. 4 Gillespie, drilling at 765 feet; Ruby Consolidated Development Co.'s No. 3 Price-Hall, drilling at 435 feet; Bolling & Co.'s No. 3 Ben Price, down 362 feet and

KEYSTONE COPPER STEEL

Keystone COPPER STEEL

COPPER is the anti-toxin for sheet metal rust. Properly proportioned, it puts into steel for tanks and sheet metal products a new measure of endurance and resistance to rust that cannot be attained without its help. Experience proves that

KEYSTONE COPPER STEEL

Gives Maximum Rust Resistance

For Tanks

Keystone Copper Steel is an alloy made by the addition of a certain percentage of Copper to well made Steel, thereby greatly increasing its lasting qualities under actual service conditions. It is unexcelled for roofing, siding and construction purposes, as well as for culverts, flumes, tanks, barrels, and all oil country uses. Sold by leading metal merchants. Send for booklet, "The Testimony of a Decade," which proves conclusively the superiority of Keystone quality by actual service tests.

Apollo

GALVANIZED SHEETS

Recognized as the standard of quality since 1884. APOLLO-KEYSTONE Galvanized Sheets with the copper steel alloy base are unequaled for Culverts, Flumes, Silos, Roofing, Siding, Spouting, Gutters, Cornices and all forms of exposed sheet metal work demanding superior rust resistance. Write for Apollo booklet.

Tin Plates

High grade roofing plates, carefully manufactured in all details. Also American Coke and Charcoal Bright Tin Plates.

Black

SHEET PRODUCTS

American Bessemer Steel Sheets, American Open Hearth Steel Sheets, Keystone Copper Steel Sheets, Automobile Sheets—all grades, Special Sheets for Stamping, Electrical Sheets, Stove and Range Sheets, Japanning and Enameling Stock, Steel Barrel and Keg Stock, Ceiling Sheets, Black Plate, Etc., Etc.

Manufactured by

American Sheet and Tin Plate Company

General Offices: Frick Building, Pittsburgh, Pa.

DISTRICT SALES OFFICES

Chicago Cincinnati Detroit New Orleans New York Philadelphia Pittsburgh St. Louis

Export Representatives: U. S. Steel Products Company, New York City

Pacific Coast Representatives: U. S. Steel Products Company, San Francisco, Los Angeles, Portland, Seattle

PROFITS

are legitimate only so long as equal value in service is returned.

Are you satisfied with the service your drilling equipment is rendering? If not, buy a piece of

Dreadnaught

equipment and give it a trial and make your own comparison.

If your Supply Dealer can not furnish you with information and prices, apply direct to the maker.

Catalogue No. 12 ready for distribution

BEAUMONT IRON WORKS CO.
BEAUMONT TEXAS U. S. A.

drilling; Wiles & Co.'s No. 3 G. Smith, still rigging; Pennsylvania Oil Syndicate's No. 6 J. F. Young, spudding; P. H. Lavelle's No. 3 W. R. Hunton, drilling at 720 feet; Roy Hogan's No. 1 Poor Farm, shut down at 250 feet. In eastern Warren County, Kopler and others have finished casing No. 1 Hugh Hill and drilling will be resumed at once.

Cumberland County Active

In Cumberland County three new holes were spudded.

The Morris Petroleum Co. completed the best well, No. 3 A. Huddleston 175 acres, in the Sulphur Creek district, at 650 feet, 150 feet below the Pencil Cave. It is estimated at 300 bbls. flush.

The Kerr, Logan and Blythe wells, which have been drilled in for several months are now being tested by the Paragon. After being pumped steadily for 10 days No. 2 Kerr is making 20 bbls. per hour; Logan No. 2 is pumping 86 bbls. in 6½ hours, while Raydure's Nos. 1 and 2 Blythe are making 57 bbls. every 10 hours. These are all in the Kettle Creek district.

Bear Creek—Wilcox Bros. are spudding No. 1 Sarah Shackles at 65 feet; Douglass St. Clair's No. 1 King, shut down waiting on boiler; Martsolf Fuel Products Co., temporarily abandoned No. 2 location on the Sam Bruton farm.

Sulphur Creek—Hook, Ross & Wise's No. 2 Sam W. Riddle, is drilling at 480 feet and the second Sunnybrook is expected within 20 or 30 feet; Combest Oil Syndicate's No. 4 A. Huddleston 210 acres, drilling at 200 feet; same syndicate is spudding No. 1 Groce, on lower Sulphur Creek, about 1 mile south of Peytonsburg. Kanawha Oil Co.'s No. 1 G. Williams is rigging; Seaboard Oil Co.'s No. 2 C. Groce is shut down.

Kettle Creek—Lynch & Co.'s No. 1 Barksdale is down 200 feet; Young Oil Co.'s No. 2 J. R. Poindexter, making hole at 203 feet; Atlantic Oil Producing Co. re-setting casing in No. 1 Dowell. W. S. Raydure shut down at about 780 feet on the Sam Smith tract; McKee and others moving a rig to the Scott farm of two acres, on the Blythe fork of Kettle Creek; Bushaw & Co.'s No. 3 Turn Smith is making hole at 172 feet.

At Judio Creek, Judio Development Co. finished reaming and casing No. 3 J. B. Hume and progressing at 500 feet. In the Marrowbone Creek section, Douglas St. Clair is drilling No. 1 Ethel Baker, a rank wildcat, at 350 feet. Northeast of Burkesville, the wildcat being drilled by the Shady Side Oil Co. on the C. Strange farm, on Big Renox Creek, is shut down at 390 feet.

Monroe County Wildcats

Two wildcat tests in Monroe County were abandoned. On the Wendall farm, 7 miles southwest of Tompkinsville, Snyder & Spatz abandoned No. 1 at 550 feet. A large amount of gas was found in this well which was short lived. At Black's Ferry, east of Tompkinsville, Holmes and associates' No. 1 B. Bedford is dry at 485 feet, the fourth dry hole drilled by these parties in eastern Monroe.

E. N. Ahlfeldt and associates of Camden, Ark., have taken over a block of acreage 2½ miles down East Fork Creek, from the Railey Pool and are arranging to drill several tests. Mr. Alfeldt has also taken over a part of the Logan Heirs lease, in the Kerr district, at Kettle Creek and expects to drill several wells. T. H. Myers, geologist, has staked off three locations for him in the Railey district.

Stumb & Stumbo moved a rig on the Dickerson farm, near Bushong post office, on the waters of East Fork Creek, about 2½ miles from the Railey Pool. T. H. Meyers recently completed a survey of acreage on Meshack Creek for Hawley & Wilson of Illinois, who expect to drill at least two tests. The property is across the river from the Old Salt Lick Bend Field.

The Louisville Gas & Electric Co. is making hole at 850 feet in No. 1 W. W. Wright in the Persimon vicinity, north of Tompkinsville; J. J. White's No. 1 C. Chapman, at Rock Bridge, 7 miles north of Tompkinsville is shut down at 365 feet; the Star Oil Co.'s No. 1 Humble, on McFarland Creek, south of Tompkinsville is progressing at 400 feet; Hensgen & Co.'s No. 1 Kidwell, on the waters of Big Sulphur Creek, is drilling at 60 feet; U. G. Bowles and others are drilling at 150 feet on No. 1 J. B. Chappell near Otia Landing on the Cumberland River; Bentley and associates made a location on the Crabtree farm near Vernon and will move a rig within 10 days. In the Railey Pool, Turner & English plugged No. 1 Railey with casing in the hole. This well had an excellent showing and is reported plugged because of lease trouble. These parties cleaned out an old well on the England lease, adjoining the Railey on the south, and found considerable oil in the hole. It will be given a shot and tested. To the west of the Railey, an old well on the Ingrum farm, is showing for 3 bbls. after being cleaned.

Western Kentucky

Metcalf County—Phelpy & Co.'s No. 1 at Dry Fork is dry; Richards and others' No. 3 Thompson was abandoned at 446 feet; Knob Lick Oil Co.'s No. 4 Anderson, dry; Seattle parties No. 1 Barret, dry at 220 feet; Portland parties' No. 1 Pedigo, gas at 185 feet.

Several new wells have been started in Metcalf County, and a number of leases have changed hands. Portland parties are moving a rig to the F. Clark farm near the Toby Pool; and are drilling No. 2 Pedigo. On the Beard lease, near Knob Lick, Best & Bartlett of Milwaukee have a big flowing sulphur well at 205 feet.

Allen County—F. A. Brendall's No. 1 T. Calvert, 15 bbls. at 300 feet; T. R. Wilson's No. 5 Fee, dry at 389 feet; W. C. C. Spencer's No. 5 Barlow, dry at 250 feet; T. A. Sheridan's Nos. 5 and 6 P. Gibson, 20 and 7 bbls. respectively, at 351 and 344 feet.

Two good wells were drilled in in the Owensboro district but are waiting to be treated to a dose of nitro.

Clay County, Tennessee

No. 3 Marcum, at Willow Grove, in Clay County, Tennessee, is dry and abandoned at 700 feet, 200 feet below the Pencil Cave. No. 4 is spudding, 350 feet east of No. 1, which is producing at the rate of 6 bbls. an hour. On the Bilbrey lease, at Spivey, No. 3 of Durham & Biggerstaff is dry at 486 feet.

Mississippi News

The Middle States Oil Corporation and Douglass St. Clair have started a test, near the town of Conway, in Leake County, Mississippi. It is in a direct line with tests drilled in Hinds and Madison Counties.

It is reported a block of leases, north of Canton, in Madison County, Mississippi, taken in the name of Mr. Allen, have been assigned to the Roxana Petroleum Co. The Roxana is filing a suit to perfect titles to some land in that block. It is also understood drilling will commence shortly after Christmas.

AUSTRIANS BUYING OIL HERE FOR HUGO STINNES

Dr. Carl Heller, vice president of the Fanto Petroleum Co. of Vienna, Austria, and Philip Remi, a director of that company, are here arranging to purchase crude oil for distribution by their company, according to reports in oil trade circles. With Julius Priester of Vienna and a representative of the Galcian Oil Co., the two officials recently made a tour of inspection of the principal oil fields in the Southwest.

Dr. Heller, according to local reports, is the Austrian representative of Hugo Stinnes, and it is understood that he is in this country for the purpose of completing the Stinnes plan to engage in the oil business on a large scale in Central Europe.

N. LOUISIANA-ARKANSAS

(Continued from Page 52)

Producing Co. is shut down 1,930 feet in No. 4 Miller, Section 24-15-20. Brown and others have reset liner to test No. 1 Robinson at 2,045 feet, Section 23-18-20. The Magnolia Petroleum Co. is down 1,730 feet in No. 4 Hammond, Section 25-15-20.

Ouachita County Area: The Atlantic Oil Producing Co. is rigging up to drill No. 4 John Webfer, reported abandoned last week in error, Section 30-15-19.

Bellevue-Bossier

Development in the shallow sand area in Bossier Parish resulted in the completion of two good pumpers, the Humble Oil & Refining Co.'s No. 25 Roy, Bliss & Weatherbee, in Section 15-19-11, making 60 bbls. at 350 feet and R. O. Roy's No. 22 Scandland, in Section 15-19-11, making 60 bbls. at 368 feet.

The Humble Oil & Refining Co.'s No. 26 Roy, Bliss & Weatherbee, in Section 15-19-11, is arranging to pump and drilling has been started on Bliss & Weatherbee A-8, in Section 10-19-11.

Olmstead and others are drilling at 260 feet in Strange A-11, Section 23-19-11; R. O. Roy is arranging to pump No. 23 Scandland and set 6-inch casing in No. 27 in Section 15-19-11, and the Standard Oil Co. is arranging to pump No. 9 Bliss & Weatherbee and set 6-inch casing in No. 10 in Section 10-19-11.

Caddo Parish

Brewer & Sewall have a fishing job at 2,418 feet in No. 1 Sharp, west of Cross Lake, 12 miles northwest of Shreveport, in Section 15-18-16.

Wells have been completed and arranging to pump by the Dixie Oil Co. in No. 2 State, Section 13-21-15, at 1,695 feet, the Fortuna Oil Co. in No. 18 Robertshaw, Section 14-21-15, at 1,670 feet, and the Muslow Oil Co.'s No. 2 Brown fee, in Section 32-21-15, at 2,135 feet. The Humble Oil & Refining Co. is drilling at 2,665 feet in No. 1 Youree Randolph, Section 24-20-15.

De Soto Parish

Ulray and others have a rig up and ready to start drilling on the Frost Johnson Lumber Co. lease in Section 3-11-15, 7 miles east of Logansport, in the south end of the parish.

Red River Parish

Caldwell and others are drilling at 1,500 feet in a test on the Welch lease in Section 7-14-10, 5 miles north of the old Crichton Field.

Louisiana Wildcats

Bienville Parish: The Hodge Hunt Lumber Co. is rigged up ready to start drilling No. 3 Hodge in Section 31-15-5, 8 miles southeast of Bienville. The Ohio Oil Co. is drilling in rock at 1,400 feet in No. 1 Bodcaw Lumber Co., Section 19-16-6, 12 miles west of Bienville. The Standard Oil Co. has made a location for No. 1 Woodward & Walker, Section 16-17-8, 15 miles northwest of Bienville.

Bossier Parish: George O. Baird set 6-inch casing at 800 feet in No. 2 Montgomery, Section 18-16-11, in the Elm Grove district south of Shreveport. Skannell and others are drilling at 2,600 feet in a test on fee land in Section 22-17-12, half way between Elm Grove and Shreveport. In the north end of the parish, the Oil Field Gas Co. set 8-inch casing at 1,210 feet in No. 1 Bolinger, Section 29-23-11, 10 miles northeast of Plain Dealing.

Lincoln Parish: The Four Creek Oil Co. is taking a core barrel at 930 feet in No. 1 Colvin, Section 27-20-3w, 15 miles southwest of Farmerville.

Morehouse Parish: Morris, trustee, completed No. 1 Plemmons in Section 20-20-5, making 25,000,000 feet of gas at 2,265 feet. Cronin & McKenzie are drilling at 1,755 feet in No. 2 Perry, Section 13-20-4; Ladel and others set 6-inch casing at 2,250 feet in No. 16 fee, Section 21-20-5; Morris trustee set 6-inch casing at 2,212 feet in No. 1 White, Section 28-20-5, and the Southern Carbon Co. set 12½-inch at 180 feet in No. 11 Spyker, Section 17-20-5.

Ouachita Parish

The Atlas Oil Co. is drilling at 3,120 feet in a deep test on the West Virginia Timber Co. lease in Section 3-18-5e.

Haynes and others are shut down at 2,258 feet in No. 2 Dixie Lumber Co., Section 54-17-3, account of the high water. Ladel and others are drilling at 2,155 feet in No. 17 fee, and at 2,130 feet in No. 18 in Section 29-20-5.

The Southern Carbon Co. is rigging up to drill No. 25 fee in Section 27-19-5 and trying to kill a gas blowout at 415 feet in No. 6 Fairbanks, Section 43-20-5. The Tex. La. Producing Co. set 8-inch casing at 940 feet in No. 3 fee, Section 4-19-5, and The Texas Co. set 12½-inch casing at 180 feet in No. 4 Gibbs, Section 30-19-5, and is drilling at 1,575 feet in No. 3 Gibbs, Section 29-19-5.

The United Oil & Gas Products Co. set 8-inch casing at 900 feet in No. 1 Kerr, Section 12-19-4; the West Virginia Oil & Gas Co. is drilling at 2,050 feet in No. 2 West Virginia, Section 4-18-5, and Zeigen and others are temporarily closed down at 1,405 feet in No. 1 Michim, Section 7-20-5.

Completions: The Southern Carbon Co. completed No. 24 fee, in Section 27-19-5, making 2,000,000 feet of gas at 2,273 feet. The Texas Co. completed No. 3 O'Neal, Section 33-19-4, making 5,000,000 feet of gas at 2,248 feet.

Sabine Parish: The Gladys Belle Oil Co. abandoned its test on the Raines lease in Section 33-9-11, known as the Belmont well, having drilled to 3,896 feet.

Union Parish

Collins & Woodley got salt water at 2,550 feet in No. 1 Newson, Section 23-23-1e, and the test has been abandoned.

Love Brothers drilled to 2,568 feet in their test on the Security Trust lease in Section 12-23-1w, and the well has been abandoned. A showing of dead oil was obtained at 2,247 feet. Davidson & Palmer set 10-inch casing at 150 feet in No. 1 Green, Section 19-23-1, 13 miles north of Farmerville. The Empire Gas & Fuel Co. is drilling at 2,655 feet in No. 1 Green, Section 30-19-1e, 11 miles south of Farmerville. The Ohio Oil Co. has derrick up for No. 1 Dubach Lumber Co., in Section 15-20-1w, 4 miles southwest of Farmerville.

McCaldin and others have derrick up for a test on the Gulley lease in Section 36-21-1e, 5 miles east of Farmerville.

The Union Parish Drilling Co. tested dry with a showing of dead oil at 2,275 feet in No. 3 Clark, Section 17-23-1e, drilled deeper and is arranging to test at 2,287 feet. Woodard & Clarke set 10-inch casing at 210 feet in No. 1 Clarke, Section 17-23-2e, 14 miles northeast of Farmerville. The Union Power Co. has four wells drilling on the Union Sawmill Co. lease in the east end of Union Parish, about 10 miles northwest of the Monroe gas field.

Webster Parish

In the Cotton Valley district, O'Brien and others are drilling at 285 feet in No. 1 Doles, Section 26-21-9, and the Oil Field Gas Co. set 8-inch casing at 1,235 feet in No. 1 Hope Estate, Section 26-21-9. The Ohio Oil Co. set 6-inch casing at 2,590 feet in No. 1 Martin, Section 34-23-10, in the north end of the Parish. 18 miles east of Plain Dealing.

Arkansas Wildcats

Hempstead County: The Columbus-Hope Oil Co. is fishing 6-inch casing at 2,107 feet in No. 2 King, Section 24-11-25. Myers and others shut down No. 1 Bichols for fuel at 1,790 feet, Section 17-11-25. Orr and associates shut down No. 1 Yates for fuel at 1,550 feet, Section 17-12-23. G. W. Simmons, trustee, is fishing for drill stem at 2,155 feet in No. 1 Adams, Section 36-12-27.

LaFayette County: L. K. Wilburn and others are rigging up to drill a well on the Hughes lease, Section 21-19-23.

Nevada County: One failure and one producer were reported from this district. The producer is in proven territory. Ames and others' No. 3 Waters, Section 10-14-21, pumping 350 bbls. at 1,175 feet. Day, trustee, tested No. 1 Westmoreland dry and abandoned the well at 2,520 feet, Section 10-12-21. The Prescott Oil Co. shut down No. 1 Henry at 2,300 feet, Section 10-12-20. Smitherman & McDonald set 8-inch casing at 1,120 feet in No. 1 Wallace, Section 11-14-21, formerly reported No. 2 Womack, in error.

Exit— The Hoe!

OLD DOC SALVADOR says that a philosopher is a farm implement manufacturer who can keep from swearing when he sees a farmer cultivating corn with a hoe!

Maybe so. But as dealers in Axelson Amco Pumps we claim the first prize for patience and fortitude when we stand calmly by and see a producer using old fashioned working barrels, over our protest, in wells where he loses half his production thereby and is interrupted by sand or other adverse conditions every few days.

Consider a case at Breckenridge. Walker Well No. 3, P. A. Chapman, Jr., had never pumped more than five days at any one time without having to be pulled, and had never made more than 180 barrels a day.

On the 28th of August, this year, an Axelson Amco Pump (working barrel) was finally installed. It made 267 barrels a day for the first 29 days, and was then shut down for three hours only because the belt broke!

We have reports like that from every field under every known pumping conditions.

No cups are used in Amco Pumps. They operate on the principal of a ground and polished steel plunger working in a series of ground and polished Cast Iron liners.

Ask about them at any Frick-Reid Store in any oil field west of the Mississippi, from Wyoming to the Gulf of Mexico, or write our main offices for illustrated literature.

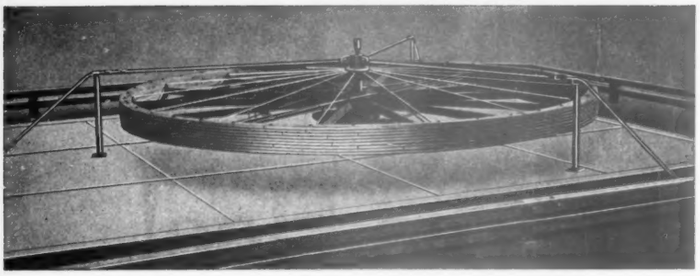
In Oil Field Equipment—the most HUMAN organization in America

Frick-Reid Supply Co.

Tulsa. Okla. Pittsburgh. Pa.

West of the Mississippi—Stores Everywhere

Dreadnaught and other Rotary Equipment—Complete Cable Tool Equipment—Reid Gas Engines and Powers—Donovan Boilers—Roebling Wire Lines—Whitlock Cordage—F-R Electric Light Plants—Axelson Working Barrels and Sucker Rods—Rensselaer Valves—National Transit Pumps—Jones and Laughlin Tubular Goods—Ratigan Beam Hangers, Sure Grips, etc.—Camel Hair Belting—F-R Drilling and Pumping Service Belting—Warren Steam Engines, etc.



Durnell Talks on Standardization of Pumping Powers

Being the third of a series

H. G. Durnell

The shaft of the Durnell Underpull Power is a very important feature. It is the backbone.

The shaft is made of steel, is carefully machined and is of generous proportions.

The lower end of the shaft rests on two special hardened discs with rounded surfaces which act as a pivotal bearing. Laterally, the shaft is supported by bronze bearings. The end of the shaft is operating in a bath of oil which insures perfect lubrication.

The upper end of the shaft revolves in a special bearing and is lubricated with light oil from an overhead cup. It is supported by three large truss rods extending through adjustable turnbuckles to dead men in the ground outside the rim of the bandwheel.

These features are found only in the Durnell Underpull Power, and they add materially to the efficiency and economy of this Power.

INTERNATIONAL SUPPLY COMPANY

EXCLUSIVE AGENTS. STOCKED AT

OKLAHOMA		KANSAS	WYOMING
Okemah	Jennings	El Dorado	Casper
Bristow	Shidler	Virgil	
Okmulgee	Tonkawa	Madison	
Bryant	Bartlesville		
Wewoka	Pawhuska		MONTANA
	Drumright		Sunburst

MANUFACTURED BY

UNION MACHINE COMPANY

BARTLESVILLE, OKLA.

3

CANADIAN FIELDS

(Continued from Page 44)

proximately $100,000 in further development.

It is reported that a Minneapolis syndicate has leased territory in the Warner and New Dayton districts, where surface gas showings have been known for several years; and will next year drill its No. 1 test near New Dayton. A preliminary geological survey has already been made.

In Many Island Lake district, the Snake River Royalty Syndicate, Section 20-14-1w-4, shut down for some weeks, is preparing to resume work.

In east-central Alberta, the British Petroleums, Ltd., No. 2 producer, Section 30-46-6w-4, was given a public demonstration on December 2. The well was opened up for an hour, and after an initial blow of gas it flowed by heads at short intervals, flowing about half a minute at a time. The total flow in one hour was about 20 bbls. The well was fitted with a 2-inch pipe. It is reported that the oil, coming from the bottom of the Benton shale between 2,018 and 2,035 feet, stands 1,800 feet in the hole, but the accompanying gas production is only around 500,000 feet. British Petroleums, Ltd., has not yet announced any plans for further development work; though before the strike some arrangements were made for utilizing the wet gas from No. 1 well in a combined gasoline absorption and carbon black plant, and for drilling additional wells to the gas sand. Shortly before the demonstration the tool house of the Edmonton Gas & Development Co., which drilled British Petroleum' No. 2, was destroyed by fire, supposedly of incendiary origin; but the drilling crew with two lines of hose were able to keep the flames away from the derrick and other buildings and from the oil in storage.

Gas Contract Test

The Canadian Western Natural Gas Co. of Calgary, has served formal notice on the city of Lethbridge, Alta., of its intention to cut off the natural gas supply at the end of 30 days. The city will apply to the Alberta Board of Public Utilities to establish the validity of the contract between the city and the company, entered into July 30, 1912, and providing, it is claimed, for a 35-cent rate until July 30, 1927. Previous litigation instituted by the city to prevent the discontinuance of the gas supply was thrown out by the courts on the ground that under existing legislation the matter should be taken to the Provincial Public Utilities Commission.

In the Ontaria fields, the Glenwood Natural Gas Co.'s deep producer, Hugh Shanks farm, Romney Township, Kent County, is pulling the 5⅜-inch casing to cover a baler lost in the hole. When this is done the well will be tubed and swabbed and put on the pump. Union Natural Gas Co.'s No. 248, Truckenbrod farm, will start rimming down to the top of the Trenton limestone early next week. Union No. 249, Mancell farm, Tilbury East Township, spudded in this week and at last reports was down more than 100 feet.

KANSAS FIELDS

(Continued from Page 54)

Jackson-Moorhead, C SE NW, Section 26-29-9, as dry at 1,462 feet.

In Cowley County, the Buffalo Trust was spudding No. 7, SW cor. NE, Section 24-32-4, a twin well. Trees Brothers & Clark's No. 1 Brown, NE cor. SW, Section 6-32-5, topped the sand at 2,332 feet and after a shot of 20 quarts in sand at 2,342-51 feet, it was cleaned out and was estimated to be good for 25 bbls.

In Greenwood County, R. G. Gillespie's No. 6 Jones, CNL SW, Section 21-23-13, was a 50-bbl. producer after a 40-quart shot in sand at 1,712-32 feet. The Theta Oil Co.'s No. 7 Souder, NE cor. SE SW, Section 3-23-13, was dry and abandoned at 1,832 feet. The Empire Gas & Fuel Co. also had a duster in its No. 1 Harris, C NW NW NE, Section 19-22-11, at 2,290 feet.

R. G. Gillespie's No. 7 Jones, CNL NE SW, Section 21-23-13, was drilling at 350 feet. Tatlock and others were spudding their No. 1 Parke, SW cor. NW, Section 9-26-12, and Weiss and others were also spudding No. 2 Leedy, SW cor. NE NW, Section 31-22-10. McGinnis, Goble and others were rigging up their No. 1 Brotton, SW cor. NE NW, Section 14-24-9, and Rogers and others were spudding their No. 1 Brotton, SW cor. NW NE, in the same section.

CALIFORNIA FIELDS

(Continued from Page 50)

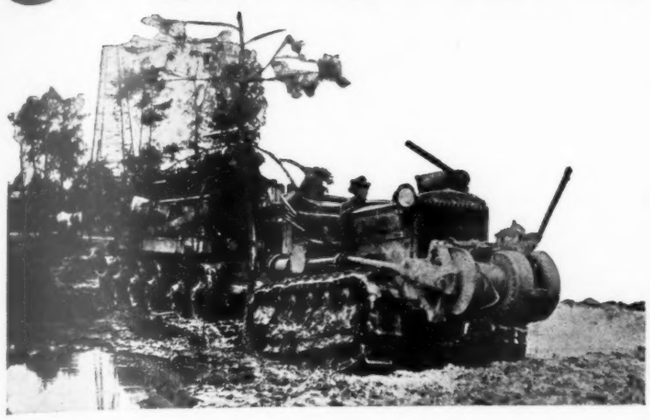
and is producing 24.6 gravity oil with a cut of 3 per cent. This well, about 500 feet west of the United Oil Co.'s No. 1 Bixby, is of particular importance because of the test on the latter well.

Probably the largest well put on production during the week was No. 2 Dean of the United Oil Co., which came in flowing a little less than 4,000 bbls. a day. This well, which was redrilled and deepened from 3,164 feet, its former production depth, to 5,039 feet, was finished with a 4¾-inch oil string landed on bottom. The oil, clean and testing 24.3 degrees, is flowing through a ⅞-inch bean under a pressure of 760 pounds. The United is still attempting to secure a water shutoff in No. 1 Bixby and the test, just being made, if successful, will extend the northwestern limits of the field. It is not believed, however, this immediate territory is very desirable and if the company is successful in securing even a small well producing clean oil it will probably be satisfied. This immediate area is estimated capable of producing small wells, the production from which will not be very satisfactory because of the unusually high water content.

The Pacific Petroleum Co. put the smallest well on production during the week when No. 9 Wyatt was completed. This well, which has been off production for several weeks, was brought in after being plugged back from 5,164 feet to 5,150 feet. Its maximum production on the pump was 145 bbls. daily of 24.8 gravity oil. Tucker & Johnson should secure an excellent well when No. 1 is brought in, for the drilling contractor killed one of its neighbors and cut down the production in another. Tucker and Johnson's No. 1 was being mudded under pressure and the over development of this area is very well illustrated by the effect this operation had on nearby wells. The Union Oil Co.'s No. 7 Long Beach Community, a 4,000-bbl. well, was mudded off and killed by mud from Tucker and Johnson's No. 1, while several others nearby are all showing mud apparently from this well. The Black Diamond Oil Co.'s well No. 1 is cutting about 3 per cent mud and at one time the percentage of mud rose to 5 per cent. The Dabney Oil Syndicate completed the last well put on production during the week, its No. 14-A coming in flowing 700 bbls. a day. It was finished at 4,950 feet and is producing 25.1 gravity oil with a cut of approximately 5 per cent.

Santa Fe Springs

There were eight wells, with an aggregate initial output of 6,430 bbls., put on production at Santa Fe Springs during the week; the largest to the credit of the General Petroleum Co., No. 1-A Santa Fe, gave the company the distinction of adding the largest amount of new production. No. 1-A was brought in doing 2,700 bbls. a day from 4,700 feet. The output, flowing through a ¾-inch bean under a pressure of 150 pounds, is clean and tests 33.3 degrees. During the week the Standard Oil Co. finished its fourth well on the Jordan lease and brought in a small pumper on the South Whittier Community Lease. No. 4 Jordan, the company's largest new well, was



Making Its Own Roads

* * *

In tropical wilderness, in mountainous districts, across deserts and through uninhabited country where no other form of transportation is practical or economical, the "Caterpillar"* Tractor forges ahead, a real pioneer, making its own roads and then hauling over them, transporting heavy cargoes of boilers, machinery, drilling outfits, derrick timber, pipe and oilfield supplies.

In the construction of pipe lines and in contract hauling, "Caterpillars" are used by producers and by contractors as the most dependable power because the "Caterpillar" is able to travel, climb, and pull in mud, sand, steep grades, plow through snow, and to operate successfully where no road exists.

Winch and cable attachments provide ready power for loading cargoes, placing machinery, and general construction work. Holt engineers, constantly studying the most extreme demands of cross country transportation, have developed the "Caterpillar" to its present state of perfection. It is backed by Holt's positive guarantee of satisfactory performance, and by a most complete service organization.

There is but one "Caterpillar"
—Holt builds it

The Holt Manufacturing Co., Inc.
PEORIA, ILL.
STOCKTON, CALIF.
Export Division: 50 Church St., New York
Cable Address: "Caterpillar," New York

Branches and service stations all over the world

481

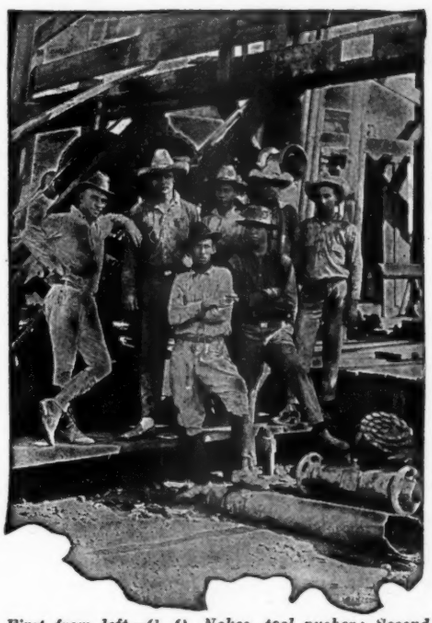
CATERPILLAR
Reg. U.S. Pat. Off.

This Luling Night Crew Knows Their Stuff

Knock Records Cold With

Reed Roller Bits

Using Slush for Lubrication



First from left—G. O. Nokes, tool pusher; Second from left, F. E. Blythe, head driller of night crew.

Right through 131 feet of hard rock with only one pull out, same being necessary on account of the formation.

Contrast this with having to pull out frequently to refill oil chamber (which was the old method.)

Figure the time thus saved—and the risks of the pull out—and you will know one of the big reasons why popular demand for Reed Bits is sweeping rotary fields everywhere.

The run made in 48½ hours with one set of cutters was done **without a drop of lubricating oil,** using slush for lubrication.

Slush lubrication is a Reed system exclusively and is possible in no other bits; this is admitted in sworn testimony by competitors.

Drilling crews are at their best when furnished with Reed Roller Bits and Reamers.

Anything that lessens the risk of losing a hole, eliminates needless pull outs and speeds up drilling, wins over the driller—right now.

We wonder if there are any drillers, who do not know about this Reed Slush Lubrication System? If there are—we want them to write us for a copy of "Rubiayat of O'Gosh Dingut"—it tells the whole darn story as it came right off the derrick floor.

The strongest rock bit ever built—likewise fastest and safest.

Reed Service* Means Now

Reed Roller Bit Co

HOUSTON, TEXAS, U. S. A.

Stocks with Continental Supply Co. and Frick-Reid Supply Co.

CALIFORNIA OFFICE: 1341 Santa Fe Avenue, Los Angeles. Phone 660-68. Ask for Mr. E. B. Wiggins.

When "TIME" is the essence of the contract

Expect unfailing performance from the HERCULES Engine—when hours mean the difference between bonus and penalty, between profit and loss. It stands up! It delivers! Even in unskilled hands, even though forced almost beyond its rating, still it will deliver.

Count on the Hercules!

That is not empty selling talk. The Hercules is meeting just such emergencies every day for all kinds of contract jobs, and on oil well jacks, and on farms, and everywhere a sturdy, inexpensive, RELIABLE prime mover is the pivot of a man's undertaking. There isn't a more dependable gasoline engine made for hard, enduring use. That can be proved to you.

Your request will bring you the facts about a good engine for your work—without any over-zealous follow-up to fret you.

THE HERCULES CORPORATION
Engine Division Dept. E **Evansville, Indiana**

HERCULES ENGINES

drilled to 4,654 feet and was finished with a 4½-inch oil string landed on bottom. During the first 24 hours, the well turned 750 bbls. of 32.7 gravity oil with a cut of 5 per cent into the tanks and, while the initial production is much lower than that of No. 2, the last completion it is still a satisfactory completion. The company's new well on the South Whittier Community Lease was No. 18. This well, however, did not have sufficient kick to flow and it was put on the beam at 4,668 feet. It started off pumping 80 bbls. a day of 32.6 gravity oil which showed a cut of 3 per cent and, while the initial output is unusually small, the well has been quite consistent.

The Union Oil Co., discoverer of the field, completed a rather small well when No. 7 Alexander was brought in. This well picked up the pay sand and was finished at 4,700 feet with a 4¼-inch oil string. No. 7 Alexander was put on production late in the week and responded with a flow of 550 bbls. of 33.4 gravity oil, which showed a cut of 2½ per cent. This is the company's sixth producer on this lease, there being only one well, No. 5, in the course of drilling. Oscar Howard followed his success of last week by completing No. 5 Hathaway. The bit penetrated the oil sand at 4,598 feet and it was finished with a 4½-inch oil string landed at 4,595 feet. The output from this well, 750 bbls. daily, is clean and tests 34.4 degrees. In addition to completing this new well, Howard returned No. 3 Bell to production after cleaning it out. This well was completed early last month doing around 1,000 bbls. but it sanded up after flowing for a few weeks. It has just been put back on production doing 600 bbls. a day, the oil testing 32.3 degrees and showing a cut of 5 per cent.

George F. Getty was rewarded during the early part of the week with an 800-bbl. well when No. 14 Baker, finished at 4,652 feet, was put on production. A 3-inch oil string was used and the production, fairly consistent, tests 33.9 degrees and shows a cut of one half of 1 per cent. Getty almost succeeded in returning No. 12 to production but it died the day after being swabbed in. The Universal Oil Co. had a little better success and brought in No. 5 Blanchard after finishing it at 4,600 feet. The well made a little better than 200 bbls. a day of 31.4 gravity oil which showed a cut of 1½ per cent. There are several wells in process of completion and one or two being swabbed for production. Probably the next two wells will be No. 6 on Mattern Lease No. 2 of the Petroleum Midway Co., finished at 4,632 feet, and the Shell Oil Co.'s No. 5 Slusher completed at 4,675 feet. The Standard Oil Co. also has several wells which should be early completions, the most promising being No. 1-A Sanchez and No. 9 Weisel. The Standard has passed the 4,900-foot mark in No. 1 W. L. Houghton without noting any showings of importance and the present formation, a sticky blue shale, is not oil bearing.

Huntington Beach

The Standard Oil Co. brought in three wells at Huntington Beach during the week, No. 18 on Lease B, No. 22 on Lease A and No. 3 Surf. The first named, No. 18-B, was the largest and come in doing 600 bbls. a day of 23.9 gravity oil with a cut of 2 per cent from 4,550 feet. It is flowing through a one-half-inch bean under a pressure of 250 pounds. No. 22 on Lease A was finished at 4,530 feet and registered an initial production of 300 bbls. daily, the oil, flowing through a one-half inch bean under a pressure of 200 pounds, testing 24.3 degrees and showing a cut of 2 per cent. The biggest surprise was the Standard's No. 3 Surf, which was brought in a day or so ago. Only a small well was expected on this lease, which is out on the flats in the extreme southeastern part of the field, but when No. 3 was turned loose it made 550 bbls. during the first 24 hours. The oil is of a rather low gravity, testing only 20.3 degrees and containing 12 per cent water, but, notwithstanding this large cut, is considered a good well for this lease. It is flowing through a ⅞-inch bean and shows a fair pressure, 150 pounds. The Amalgamated Oil Co. was successful in bringing in No. 20 on its Miley-Keck property, a 500-bbl. producer. The Amalgamated secured this lease from the Miley-Keck Oil Co. a year or so ago and has developed a substantial production. The company's latest completion, No. 20, was finished at 3,655 feet and is producing 22.6 gravity oil with a cut of 1 per cent through a one-half inch bean under a pressure of 300 pounds. The Republic Producers completed No. 6 Community at 4,621 feet and, although the production is comparatively small, 200 bbls. daily, the output is satisfactory considering its location. This well is the company's first completion since its insolvency, which resulted in a recent assessment of 3 or 4 cents a share.

The Shell Oil Co.'s weekly completion was No. 7 Ashton, brought in from 4,602 feet. This lease is in the northern part of the field directly affected by edge water and the production, which tested 19.4 degrees with a cut of 20 per cent, showed the effect. The Julian Petroleum Corp. put No. 3 Tex-Cal on a production test at 4,467 feet, but a successful water shutoff had not been secured. The company is now making an effort to locate the source of water and the well will undoubtedly be recemented within a short time. The Holly Oil Co., after finishing No. 6 at 4,806 feet and No. 8 at 4,801 feet, is making preparations to bring in the latter. The former is being plugged back and a production test will be temporarily delayed. No. 2 Hill Community of the Union Oil Co., idle for several weeks, is being deepened and reports a core barrel sample taken at 4,398 feet was very encouraging.

Miscellaneous Drilling

The Union Oil Co.'s No. 1 Callender, the only producing well in the new Compton Field, continues to put about 1,350 bbls. of crude oil into the tanks each day, which the company is pumping direct to its Wilmington refinery. The 12 drilling wells in the field are being watched closely for the presence of oil sands. It is nearly impossible to correlate the logs of the various wells at present with that of the discovery well and any attempt to outline the probable limits of the field is only a matter of conjecture. It is believed the general trend will be from northwest to southeast. Many geologists who have studied the field believe it will be limited to the hill, which, if correct, will add very materially to the productive oil acreage of the Union Oil Co. and give it practically absolute control. The Union has been instrumental in opening up several southern California fields in the past 10 years and, might have secured the major portion of the producing area at Santa Fe Springs. It is to be hoped the Union has secured enough acreage at Compton to be rewarded for discovering both the Santa Fe Springs and Compton Fields. The Union was the first company in California to establish a geological department.

The Oak Ridge Oil Co.'s Bandini wildcat, the center of interest a week or so ago, will be recemented after a series of tests to determine the location of the water. The company was unable to secure a shutoff and some little time will probably elapse before a production test. There is question whether the water is coming direct from the reported oil sand or above it. A core taken showed the bit to be in a good oil sand when drilling was suspended, but the water test showed a large quantity of salt water was entering the hole. The company thought well of the showing and made preparations to bring in a good well. If commercial production should be secured, the Oak Ridge Oil Co., which has several

hundred acres under lease, will be in a position to develop the much sought after production in southern California to augment its production in Ventura County.

The Standard Oil Co.'s wildcat near Anaheim is making hole at 2,250 feet, drilling very slowly so a careful check may be made. The Pan-American Petroleum Co. did not secure a water shutoff in its El Segundo wildcat and will recement some time during the coming week.

Field Operations

Oil field operations reported to the State oil and Gas Supervisor show 18 new wells started, compared with 28 during the previous week, a total for the current year to date of 1,313, compared with 1,341 at the same time last year. Permits were issued for the following new wells:

Torrance

Location, company and well—
Associated Oil Co.—
14-4-14 Torrance, 1.
23-4-14 Bush Voorhis Oil Co., 3.
14-4-14 Fred B. Foster & Co., 69.
23-4-14 Grunwell Oil Corp., 1.
Pet. Midway Co., Ltd.—
15-4-14 Wilson Com., 6.
15-4-14 Wilson Com., 7.
15-4-14 Pet. Securities Co., 9.
15-4-14 Pet. Securities Co., 10.
23-4-14 Van Allen Oil Co., 2.

Long Beach

Acme Pet. Corp.—
19-4-12 Damron, 4.
19-4-12 Industrial Oil Synd., 23.
Pan American Pet. Co.—
30-4-12 Chainey, 1.
29-4-12 McKeon, 1.
29-4-12 McKeon, 2.
Pet. Midway Co., Ltd.—
19-4-12 Walker, 2.

Santa Fe Springs

Standard Oil Co.—
31-2-11 Santa Gertrudes, 9.

OKLAHOMA FIELDS

(Continued from Page 42)

ter Oil Co. was below 500 feet in its No. 1 Pappan, SW cor. NW, Section 3-27-5.

Burbank Production

The daily average production by companies in the Burbank Field, for the week ended December 5, was as follows:

Company—	Wells	Bbls.
Carter Oil Co.	165	7,602
Comar Oil Co.	7	261
Cosden Oil & Gas Co.	68	1,754
Devonian Oil Co.	16	525
Gardner Petroleum Co.	20	819
Gypsy Oil Co.	149	11,737
Kewanee Oil & Gas Co.	12	225
Laurel Oil & Gas Co.	16	469
Lorraine Petroleum Co.	15	355
Midland Oil Co.	5	152
Mid-Kansas Oil & Gas Co.	20	3,205
Peters & Oliphant	1	156
Phillips Pet. Co. and Delmar Oil Co.	2	2,501
Phillips Petroleum Co.	38	1,722
Phillips Pet. Co. and Skelly Oil Co.	141	7,491
Prairie Oil & Gas Co.	90	2,297
Producers & Refiners Corp.	28	822
Roxana Petroleum Corp.	57	1,040
Simons, Moore and others	29	421
Sinclair Oil & Gas Co.	131	4,972
Skelly Oil Co.	4	1,324
Tidal-Osage Oil Co.	41	1,185
Twin State Oil Co.	8	332
Total	1,053	51,370
Kay County—		
George S. Bole	1	828
Carter Oil Co.	3	2,597
Comar Oil Co.	7	2,931
Cosden Oil & Gas Co.	3	2,563
Gypsy Oil Co.	6	3,052
Laurel Oil & Gas Co.	1	38
Phillips Petroleum Co.	9	6,308
Mid-Kansas Oil & Gas Co.	4	2,609
Pure Oil Co.	1	474
Roxana Petroleum Corp.	1	810
Dye-Tomlinson and others	5	690
Skelly Oil Co. and Phillips Pet. Co.	12	1,440
Sinclair Oil & Gas Co.	1	141
The Texas Co.	1	1,209
Twin State Oil Co.	5	1,821
Total	60	27,511
Total Burbank	1,113	78,881
Total last week	1,113	84,110
Difference	none	5,229

The daily average pipe line runs from the field during the week were as follows: Gulf Pipe Line Co., 16,019 bbls.; Cosden Pipe Line Co., 7,164 bbls.; Kay County Gas., 4,916 bbls.; Osage Pipe Line Co., 1,634 bbls.; Oklahoma Pipe Line Co., 11,552 bbls.; Prairie Pipe Line Co., 6,265 bbls.; Sinclair Pipe Line Co., 3,609 bbls.; Moore Refining Co., 2,007 bbls.; Empire Pipe Line Co., 636 bbls.; Ozark Pipe Line Co., 4,215 bbls. Total, 58,017 bbls.

The amount run to storage by the various companies during the week follows: Standish Pipe Line Co., 12,417 bbls.; Mid-Kansas Oil & Gas Co., 4,442 bbls.; Dye-Tomlinson and others, 490 bbls.; Twin State Oil Co., 949 bbls.; George S. Bole, 578 bbls.; Sinclair Oil & Gas Co., 1,988 bbls. Total, 20,864 bbls.

In Tonkawa District

McCaskey & Wentz' No. 20 McKee, C NE SW, Section 34-25-1w, was good for 140 bbls. natural from sand at 2,180-2,209 feet, the oil testing 43 gravity, and No. 42 McKee, C NW SW, same section, swabbed 58 bbls. from sand at 2,577-88 feet.

The Comar Oil Co. fired a number of rather heavy shots in some old wells on the Endicott farm in Section 34-25-1w, and helped most of them to some extent.

On the Clements lease, the Comar Oil Co. increased No. 8-B, CEL NW, from 13 bbls. to 120 bbls. by shooting the sand from 1,819 to 1,839 feet with 20 quarts; No. 21-A, C NW NW, which was making nothing, produced 10 bbls. after a 40-quart shot in sand at 1,996-2,009 feet. The production of No. 11 Woods, CWL SW NE, Section 34-25-1w, was doubled after a dose of 60 quarts in sand at 2,456-94 feet, the well making 250 bbls. after the shot. The Comar Oil Co.'s No. 6 Williamson, CSL SW SE, Section 35-35-1w, also an old well, was good for 65 bbls. of 43 gravity oil following a 20-quart shot in sand at 2,527-40 feet.

The Amerada Petroleum Corp.'s old well No. 26 Woods, CEL W half W half NE, Section 34-25-1w, was given 100 quarts in sand at 2,432-2,501 feet and increased from 150 bbls. to 392 bbls. production. All of these old wells are high gravity producers, testing from 42 to 43 degrees.

The Besdor Oil Co. was carrying a hole full of water in its No. 1 Chambers, SW cor. SE, Section 9-25-2w, and was drilling at 2,270 feet in sand topped at 2,262 feet. The Comar Oil Co. was drilling by tools at 2,540 feet in its No. 9-A Clements, CWL SW NW, Section 34-25-1w. No. 12, in the CEL SW NW, on the same lease, was cleaning out with 500 feet of oil in the hole from sand at 2,503-40 feet, and No. 22-A Clements, CEL NW NW, was drilling by the tools at 2,000 feet.

Tonkawa Production

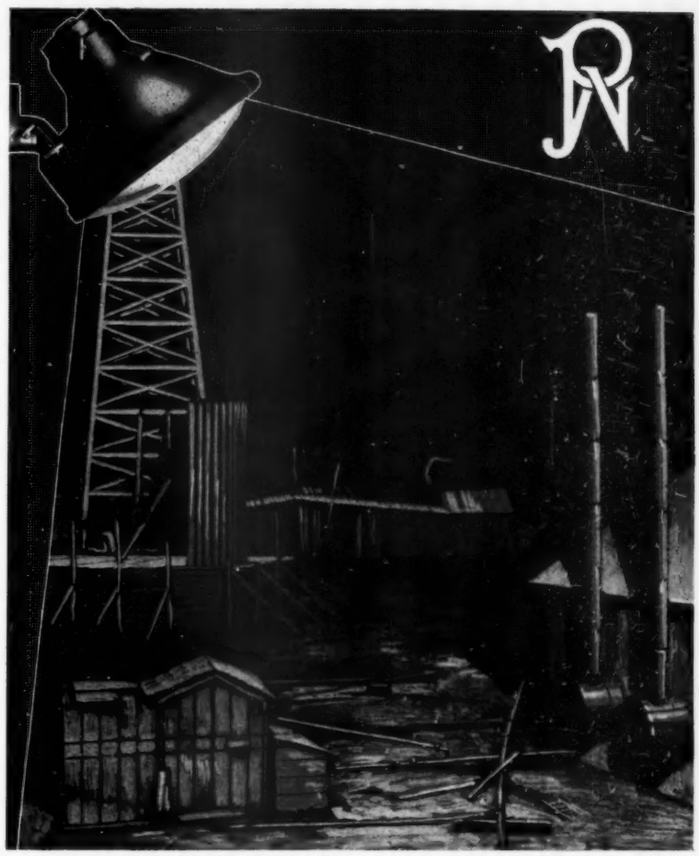
The daily average production in the Tonkawa Field for the week ended December 5 follows:

Company—	Wells	Bbls.
Amerada Petroleum Corp.	35	2,532
Blackwell Oil & Gas Co.	29	1,570
Carter Oil Co.	6	368
Champlin Refining Co.	3	99
Champlin Ref. Co. and Twin State Oil Co.	1	17
Comar Oil Co.	273	19,439
Cosden Oil & Gas Co. and Marland Refining Co.	14	590
Gypsy Oil Co.	81	8,964
Healdton Oil & Gas Co.	19	2,158
McCaskey & Wentz	43	4,204
McMan Oil Co.	2	31
Pennok Oil Co.	26	1,956
Phillips Petroleum Co.	4	551
Prairie Oil & Gas Co.	10	708
Sinclair Oil & Gas Co.	1	14
Slick and Comar Oil Co.	31	3,469
Southwestern Petroleum Co.	14	892
The Texas Co.	4	59
White Eagle Oil & Ref. Co.	7	725
Total	603	48,346
Total last week	596	47,749
Difference	7	597

The daily average pipe line runs from the field during the week were as follows: Kay County Gas Co., 23,847 bbls.; Ozark Pipe Line Co., 10,145 bbls.; Gulf Pipe Line Co., 8,349 bbls.; Empire Pipe Line Co., 615 bbls.; Champlin Refining Co., 1,373 bbls.; Prairie Pipe Line Co., 708 bbls.; Enid Oil & Pipe Line Co., 367 bbls.; Oklahoma Pipe Line Co., 368 bbls.; Bolene Refining Co., 2,439 bbls.; to lease storage, 135 bbls. Total, 48,346 bbls.

Noble County

South of Tonkawa, in Noble County, the Comar Co. shot a number of wells. No. 1 Blubaugh, NW cor. SW, Section 2-24-1w, received 15 quarts in sand at 2,208-16 feet and made 191 bbls. It had been good for 88 bbls. before the shot. No. 9-A Blubaugh, CSL SW SW, Section 2-24-1w, was given 20 quarts in sand at 2,621-41 feet, and increased from 50 to 69 bbls. No. 13-A Blubaugh, CWL NW SW, same section, was a 64-bbl. producer after a 20-quart shot in sand at



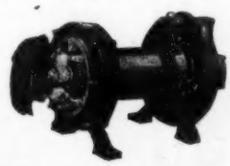
Floodlighting Pays—Use

Pyle-O-Lytes

THERE are three ways in which you can benefit directly from floodlighting with Pyle-O-Lytes:

1. EFFICIENCY—more work and better work from your men, with better spirit; no fumbling and stumbling in semi-darkness.
2. SAFETY—meets all of the safety requirements of the drilling operation; perfect lighting means greater safety for the men.
3. ECONOMY—one powerful light does the work of many smaller lights, at a lower cost. The lighting value of the lamp is multiplied by confining and properly directing its radiance.

Pyle-National Steam Turbo-Generators

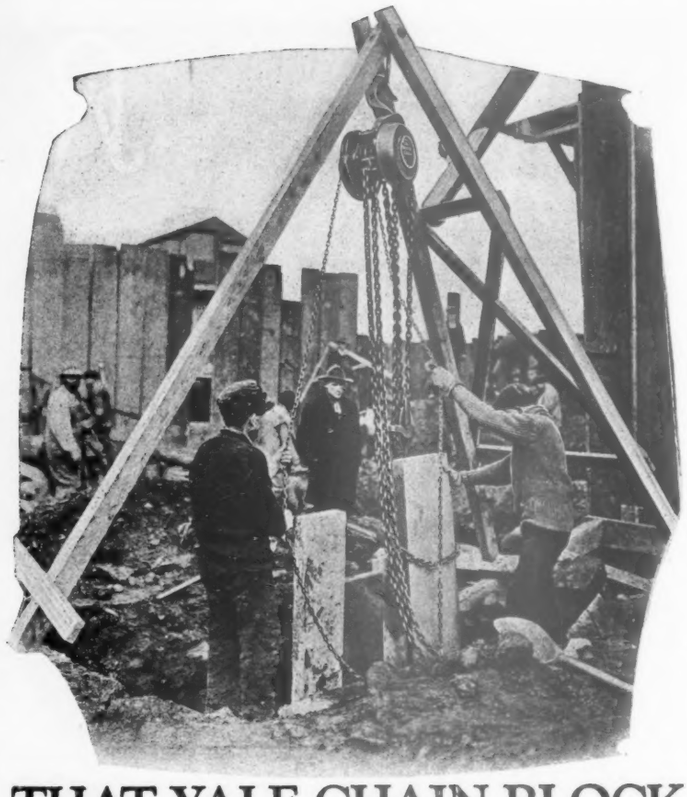


supply the "juice" for floodlighting, or other forms of illumination, continuously, satisfactorily, and economically. This is the same sturdy equipment that lights 90% of the railway locomotives in the United States and foreign countries. Performance assured by a special field service.

The supply house from which you buy carries Pyle-O-Lyte equipment; see them or write to us for special booklet on oil well lighting.

The PYLE-NATIONAL COMPANY
CHICAGO

PYLE-O-LYTE TRADE MARK PYLE-NATIONAL COMPANY REGISTERED



THAT YALE CHAIN BLOCK will stand the uncertain loads

And there's the important question when you buy a hoist.

You want to know that it will not only handle all loads within its rated capacity but that it will safely stand up under exceptionally rough usage.

You can always depend on a YALE Chain Block.

Yale Spur-Geared Chain Blocks, *from hook to hook a line of steel,* are individually tested to 50 per cent overload before they leave the factory. Every link of chain and every vital part is so proportioned as to safely withstand surge and shock loads greatly in excess of the normal working capacity.

It pays to buy a Chain Block marked YALE. That name is worth many times the slightly higher first-cost. Yale Spur-Geared Chain Blocks give exceptional service under all conditions.

YALE MADE IS YALE MARKED

YALE
Chain Blocks, Electric Hoists } For Lifts
I-Beam Trolleys, Industrial Trucks } For Shifts

YALE

The Yale & Towne Mfg. Co.
Makers of Yale Products: Locks, Door Closers and Material Handling Equipment
Stamford, Conn., U. S. A.

YALE Hoisting and Conveying Systems

2,571-83 feet, having made 23 bbls. previously. And No. 24 Blubaugh, C SE SW, same section, was good for 415 bbls. after it was treated to a 20-quart shot in sand at 2,585-2,603 feet. Its production before the shot was 120 bbls.

The Comar Co.'s No. 3 Ruzek, NE cor. SE, Section 3-24-1w, likewise an old well, without production, was made into a 10-bbl. producer when the sand from 2,040-60 feet was fired with 20 quarts. The same company's No. 7 Carmichael, another old producer making 45 bbls. of 41.5 gravity oil, was shot with 40 quarts in sand at 2,568-2,608 feet, making 80 bbls.

The Prairie Oil & Gas Co.'s No. 5-B Novotny, SE cor. NE SE, Section 10-24-1w, was drilling at 870 feet. The same company's No. 7-A Novotny, NE cor. NW SE, same section, was shut down without production at 2,604 feet, after topping the sand at 2,592 feet. Its No. 7-B Novotny, CSL SW NE SE, same section, was drilling at 1,920 feet.

The Healdton Oil & Gas Co. was running the 8-inch casing at 1,866 feet in its No. 5-B Rence, NE cor. NW, Section 11-24-1w. The same company's No. 8-A Rence, CNL NE NW, in the same section, topped the sand at 2,589 feet and was drilling ahead at 2,599 feet, flowing by heads at the rate of 58 bbls. daily. Other wells being drilled by the Healdton Co. on the same lease were at the following stages: No. 11-A Rence, CWL SW NW, rigging up cable tools at 2,563 feet; No. 12, C NW NW, fishing at 2,580 feet; No. 13-A, C NE NW, location; No. 14, CSL SE NW NW, drilling at 636 feet; and No. 14-A, CNL NE SW NW, rigging up.

On the Ellsworth lease of the Comar Co., in the same section, No. 11, CWL SW NE, was dry and abandoned at 2,381 feet; No. 8-A, SW cor. NE, was drilling by casing at 2,145 feet; tools were being moved in for No. 11-B, same location as No. 11; they were testing the sand from 2,300 to 2,355 feet in No. 12, CSL SW NE; No. 13, C SW NE, was drilling at 1,647 feet; and the rig on No. 14, CSL NW NE, was being repaired at 950 feet. On the same company's Carmichael lease, Section 3-24-1w, No. 2, NW cor. NE, was a 30-bbl. pumper in sand at 2,152-2,230 feet. The oil is 42.4 gravity. No. 3-B, NW cor. SW NE, was recementing the hole at 2,260 feet. Nos. 13-A, 13-B, 18-B and 22 on this lease were shut down.

On the Comar's Ruzek lease, No. 7-A, CNL NE SE, Section 3-24-1w, was good for 28 bbls. of 43 gravity oil after a 40-quart shot in sand at 2,052-80 feet; No. 7-B, in the same location, was shut down at 1,524 feet; and No. 13-A, C SE SE, was drilling out the cement at 2,030 feet, total depth being 2,119 feet.

The Sand Springs Home brought in an 8,000 000-foot gasser in its No. 76, CWL SW SE SE, Section 35-22-8, in sand at 1,630-50 feet. The Homaokla Oil Co. and the Dixie Oil Co.'s No. 8, NE cor. SE SE, Section 30-24-11, was abandoned in red granite at 1,866 feet. The Mutual Oil Co. also had a dry hole, its No. 22-B, CNL NW SW NE, Section 32-24-8, having been abandoned at 795 feet. The Oklahoma Natural Gas Co.'s No. 632, CEL NW NW SW, Section 27-20-12, was drilling at 730 feet.

The Sand Springs Home abandoned its No. 3, CEL NE NE NW, Section 31-20-11, as dry at 2,080 feet.

EAST CENTRAL TEXAS

(Continued from Page 46)

Fleming, Barry survey, sand at 2,935-70 feet, 195 bbls. on the swab.

Humble Oil & Refining Co.'s No. 22 Humphreys, Smith survey, sand at 2,913-63 feet, 300 bbls. on the swab.

Humble Oil & Refining Co.'s No. 10-B Ramsey "B," Smith survey, sand at 2,895-2,946 feet, 190 bbls. on the swab.

Garland Kent's No. 19 Fleming, Harris survey, sand at 2,890-2,945 feet, 400 bbls. on the swab.

Garland Kent's No. 16 Fleming, Harris survey, sand at 2,911-60 feet, 300 bbls. on the swab.

Kirby Petroleum Co.'s No. 2 Fleming, Greer survey, sand at 2,860-2,920 feet, 700 bbls.

Mutual Oil Co.'s No. 6 Howell, Matthew's survey, sand at 2,892,2,960 feet, 2,000 bbls.

Mutual Oil Co.'s No. 3 Howell, Matthews survey, sand at 2,907-61 feet, 450 bbls.

Mutual Oil Co.'s No. 2 Howell, Mathew's survey, sand at 2,910-56 feet, 1,500 bbls.

Simms Oil Co.'s No. 2 Boyd, Meador survey, sand at 2,949-79 feet, 238 bbls. on the swab.

Simms Oil Co.'s No. 1 Howell, Matthews survey, sand at 2,923-70 feet, 1,712 bbls.

Millerman & Dorning's No. 1 Clements, Smith survey, dry and abandoned at 2,992 feet.

Sun Oil Co.'s No. 1 C. Barron, Harris survey, sand at 2,990-96 feet, 120 bbls. on the pump.

The Texas Co.'s No. 11 Fleming, Harris survey, sand at 2,945-83 feet, 132 bbls. on the swab.

Skelly Oil Co.'s No. 2 Keith, Matthews survey, sand at 2,930-70 feet, 300 bbls.

Skelly Oil Co.'s No. 7 Keith, Matthews survey, sand at 2,942-78 feet, 200 bbls. the first hour.

Skelly Oil Co.'s No. 6 Keith, Matthews survey, sand at 2,947-83 feet, 175 bbls. the first hour.

Skelly Oil Co.'s No. 5 Keith, Matthews survey, sand at 2,947-65 feet, 150 bbls. the first hour.

Simms Oil Co.'s No. 4 J. T. Rose, Harris survey, sand at 2,897-2,973 feet, 1,200 bbls.

Simms Oil Co.'s No. 3 Rose, Harris survey, sand at 2,894-2,918 feet, 1,000 bbls.

Simms Oil Co.'s No. 2 Rose, Harris survey, sand at 2,900-2,969 feet, 2,300 bbls.

Humble Oil & Refining Co.'s No. 2-B Cerf "B," Smith survey, sand at 2,872-2,958 feet, 400 bbls. on the swab.

PENNSYLVANIA MARKET SHOWING IMPROVEMENT

OIL CITY, Pa., Dec. 10.—The refined market in northwestern Pennsylvania is looking up. There are distinct signs of improvement in many of the products while the declines in the demand for the other products is in every case seasonal and not as large as has often been reported during previous winters.

A decline in the demand for gasoline was noted during the past week but the consumption of this product now is larger than was expected by the most of the refiners in this territory. Good weather for this time of the year has prevailed throughout most of the East. There has been no snow in northwestern Pennsylvania and very little over the most of New York State and many machines which are usually in storage at this time of the year are now in active service. The gasoline price has also held fairly firm.

There has been practically no change in the price of kerosene although the demand has slowed off a little.

Fuel oil in northwestern Pennsylvania district is again strong with no change in quotations. Wax continues strong.

The big feature of the week was again the strength shown by lub oils. There is very little 600 steam refined or filtered cylinder stocks to be obtained in the local district and the prices continue good with fine demand. Viscous neutrals are also scarce and hard to obtain. One local refiner states that it would be impossible, for instance, at the present time to place an order for immediate delivery of 10 cars of Oil City E.

Reflecting the improvement in the oil situation the majority of refiners in this district are now refusing to quote prices on future delivery of any product.

TWO WELLS IN VENEZUELA

Two large wells of high gravity oil are reported to have been brought in in the Buchivieva district of Venezuela by the British Controlled Oil Fields Co.

PRESENT PROBLEMS OF PIPE LINE OPERATION

(Continued from Page 72)

for the coating. Finally, there has been adopted the simple method of pouring the melted tar upon the pipe which is suspended over an apron of heavy canvass carried by two men, which serves to spread it over and under the line in a thick coating and with minimum waste of material or time.

Electrolysis Problem

The pipe lines have struggled with and successfully solved one great problem which has threatened their lines—electrolysis. In some places it had been found that the pipe lines were carrying to a large extent the return current of the electric railroads in their vicinity. This of course, resulted in serious and frequently recurring damage. Our problem was to precent the electric current from getting on the pipe A careful survey showed that on account of local reasons it would be much easier to prevent the current from leaving the pipe line and, of course, by so doing we would prevent it from getting on. This purpose was accomplished by covering this portion of the line with a thick coating of refinery tar and insulating each end of the portion so covered by using special insulating flange unions. Electrical tests then made showed that all current flow had been eliminated. This method has since been applied many times at different places with uniform success. The pipe described is, of course, screw joint but the difficulty of always maintaining a tight joint at the collar, as well as the effort to reduce construction costs have developed a new method. This is the welded joint. With the great economies in first cost and ease of repair, there is no doubt this method will come into more extensive use. Field repairs can be made with this apparatus with very satisfactory results and at low cost.

Pipe Line Personnel

The pipe liner of old was a pioneer. All honor to him for he did his job. But the pipe liner of today has a different problem to face, as well as different machinery to handle. Then he pounded the old 18x5 to make it run or "bucked" the tongs with skill and strength. Today he must be a trained mechanic to handle the high grade oil engine and intricate machinery of the plant or to operate the great pipe screwing machines and ditching machines which have largely supplanted the older methods.

Today the pipe lines of the country are gathering and transporting about two and one-quarter million barrels each 24 hours, and during the first 10 months of 1923 transported 598,810,000 barrels of crude from producing properties. Every barrel of this enormous quantity during some stage of its progress to market has required the use of pipe line facilities.

OUTLINE PROBLEMS OF IRON AND STEEL

(Continued from Page 68)

which requires more apparatus and time, is that of reheating the bit immediately after quenching it practically cold. For this purpose an oil bath is used. It is necessary in using a lead bath to keep the surface of the lead covered with a layer of carbon, otherwise the lead oxide formed on the surface of the bath will attack the steel at the point where it makes contact with it.

Fish tail bits do not present the difficulties of very great mass that the standard tools do, but the same precautions regarding decarburization and overheating are to be observed. Because the section is not so great, the bit heats more rapidly and there should be less of a tendency to force the heating although the relatively thin edge is quite apt to become too hot. On the whole one hears less complaint about the performance of fish tail bits, perhaps because the drilling is usually much easier.

Good Performance for a Drill Bit

What is good performance for a drill bit, standard or rotary, is a question that is answered only by a guess. It is almost impossible to obtain quantitative figures from which a performance figure can be derived.

Probably the trouble of greatest concern to rotary drillers comes from twist-offs of drill pipe. In this the pipe manufacturer is pushed to the limit to keep up with a strong tendency in many places to speed up the tables. However, the same thing is evident in other engineering fields. The airplanes and high-speed cars of today would not have been possible had not the developments in metallography kept pace with the demands of high-speed engines. Of course there is a limit, a safety limit, that cannot be exceeded.

It is an easy matter to go about the oil fields and find broken steel parts but it is another matter to find out how serious, what the loss of time involved by the failures is. There is no doubt that many of the parts which fail frequently can be greatly strengthened, but the strengthening often involves greater costs and the increased costs have to be justified by a commensurate saving.

In giving our attention to the metallographic side of the oil industry, sight should not be lost of the problem of corrosion. This problem is quite serious in fields located near the sea coast where considerable quantities of equipment are held in stock for long periods of time. It is also a problem in refinery equipment, in absorption plants and in underground pipe and casing. We find the statement made by no less an authority than Sir Robert Hatfield that during 1921 the amount of steel and iron ruined by corrosion was almost as great as the pig iron produced, though most of the metal was recoverable as scrap. It is difficult to see how figures of this kind can be obtained but the statement, whether quantitatively accurate or not, shows what a great problem the question of corrosion is.

Iron and Steel Problems

Summing up, the petroleum industry has the following iron and steel problems before it:

1. Closer control over the kind and quality of steel entering into their equipment.
2. Improvement in the dressing and hardening of bits in the field, with particular reference to the free lance field smith and to shop equipment.
3. Determination of the loss of time and the cost involved by breakage of various parts and by frequent bit changing caused by wear.
4. The study of corrosion with particular reference to oil field and refining operations.

PRESIDENT TEAGLE ON STANDARD DISSOLUTION

(Continued from Page 21)

oil men talk things over in advance it may interest you to know that our first intimation of this sudden cut came to us from calls from newspaper reporters asking if we were going to meet the reduction. What else could we do? Can you imagine filling stations carrying a price of 22 cents a gallon on our pumps quoting 21 cents a gallon on the other fellow's pumps alongside? We met the cut and so did everybody else. Thus almost simultaneuosly prices dropped in every city and hamlet in a section embracing half the States of the Union. Witnessing the occurrence, lots of people undoubtedly said to themselves: 'See how the oil crowd works together?'

"The exceptions in the case of gasoline are furnished by peculiarly aggravated competitive conditions where local fights are under way. A refiner may sell a lot of gasoline to a jobber in the prevailing market, and the jobber, to move it quickly, makes a lower price to his customers in a certain territory. That usually forces other jobbers and refiners to meet the new price in the particular city where it was made and this price may be a few cents under that obtaining elsewhere. That is always to be expected in the time of overproduction in any line. The surplus, which may be but 5 per cent of the total production, always fixes the price for the other 95 per cent."

De Laval
Crude Oil Purifiers
—save most in cold weather

IN cold weather the installation of De Laval Crude Oil Purifiers to treat cut production is more economical than ever.

With the steaming and settling method, losses of oil in b.s. are always highest in winter and on some leases even partial purification cannot be accomplished by this means. Centrifugal purification is practically immune to outdoor temperature changes and, therefore, makes it possible to keep losses at the same low level in either the winter or summer months.

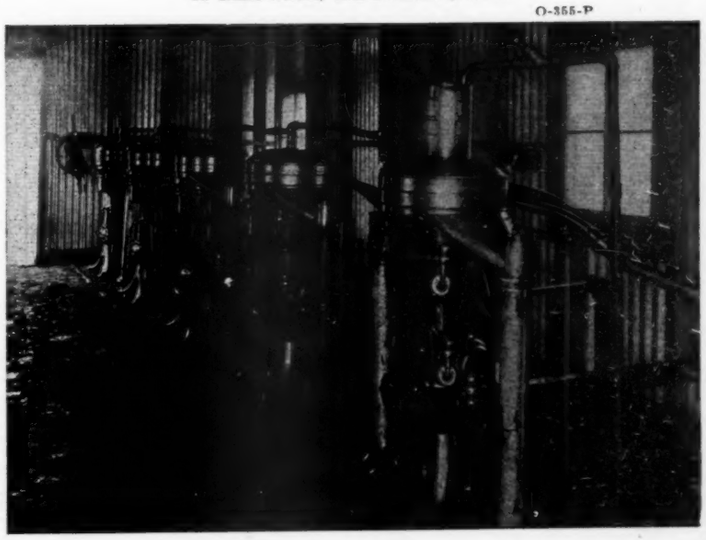
Then, too, De Laval centrifugal purification often enables the production of higher gravity crude, thus making an appreciable increase in revenue over and above the actual saving in oil and cost of treating. This feature of De Laval purification is also most important in winter, since the longer steaming period to which the oil must be subjected in cold weather with the old treating method naturally results in a higher evaporation loss and consequently lower gravity.

De Laval Crude Oil Purifiers will pay for themselves quicker now than at any other time in the year. Better get full details at once.

DID you read how evaporation costs 300-barrel lease $34,000 yearly in the October issue of the De Laval Centrifugal Review? A copy is waiting for you if you want it.

THE DE LAVAL SEPARATOR COMPANY
165 Broadway, New York
702 National Bank of Commerce Bldg., Tulsa
DE LAVAL PACIFIC COMPANY
61 Beale Street, San Francisco, Calif.

O-355-P



Improvement Shown By October Data

Government Statistics Support Contention That Betterment of Oil Situation Has Been Uuder Way For Weeks. Refinery Situation Near Normal

By C. O. Willson

Government data covering the consumption, production and stocks of crude oil and its principal refined products for the month of October clearly indicate that fundamental improvement in supply and demand which, continuing up to the present time, has brought the change in conditions apparent to everyone acquainted with the oil industry. As usual, the accompanying graphs covering the October data are based on the government's reports and the weekly market reports of The Oil and Gas Journal. The full report of the Bureau of Mines is found elsewhere in this issue and that of the Geological Survey was carried in the issue of December 6.

The remarkably heavy consumption considering the season of the year featured the October developments as it has every month since early spring. The total consumption for the month was greater than September and the daily average for October was only a few thousand barrels under the September average. A total of 7,769,000 bbls. was added to the pipe line and tank farm stocks of the industry but this is approximately 1,600,000 less than the September increase. It is needless, however, to state that this crude was an added burden to those who handle this storage in view of the fact that there has been a steady increase since October of last year. In view of this situation it is not surprising that crude prices were further reduced in November although it was apparent then that the worst period based on known conditions had already been experienced.

It was pointed out in these columns last month that the refiners were forcing more surplus oil into the pipe line and

(Continued on Page 110)

CRUDE OIL MARKET (BARRELS)

	October	September	Increase
Total all stocks (Nov. 1)	464,071,206	456,331,728	7,739,478
Pipe line and tank farm stocks gross (Nov. 1)	328,573,000	320,804,000	7,769,000
Importers crude stocks, not at refin. (Nov. 1)	1,090,000	752,000	338,000
Total refinery stocks (Nov. 1)	134,408,206	134,775,728	*367,522
Production and imports	73,824,000	71,727,828	2,096,172
Runs to stills	51,712,973	49,901,934	1,811,039
Total consumption, including exports	66,095,000	65,822,438	272,562

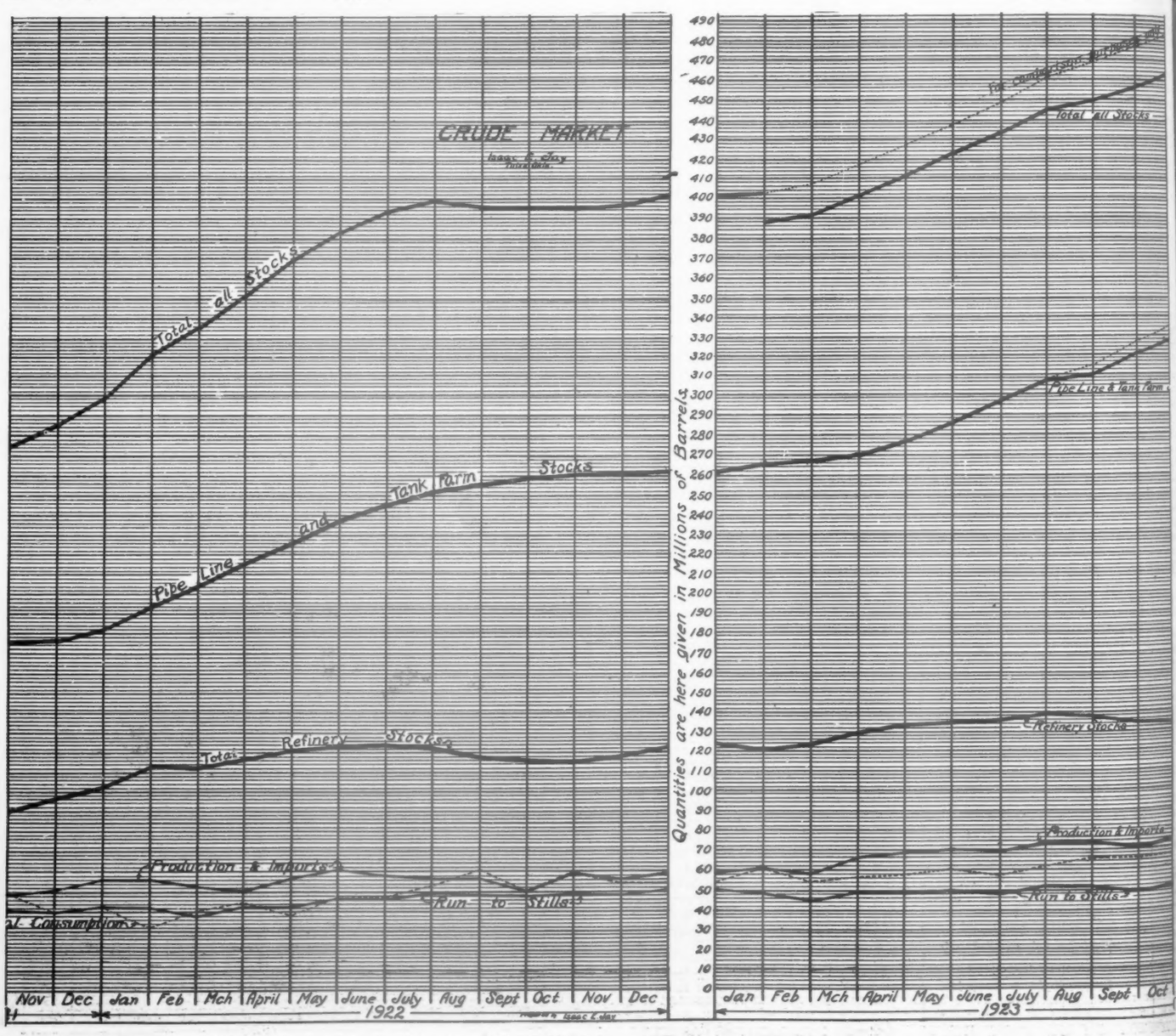
*Decrease.

Note—The dotted line of the accompanying graph includes 14,881,000 bbls. representing Mexican stocks in the hands of refiners which was dropped in January report of the Geological Survey; 4,029,000 bbls. were also dropped by a Mid-Continent company's pipe line and tank farm stocks on account of a reclassification. In September 2,724,000 bbls. previously recorded as pipe line stocks in California were changed to refinery stocks. In making comparisons with January and previous months the dotted line should be used for total all stocks and pipe line stocks. For other comparisons the heavy lines should be used.

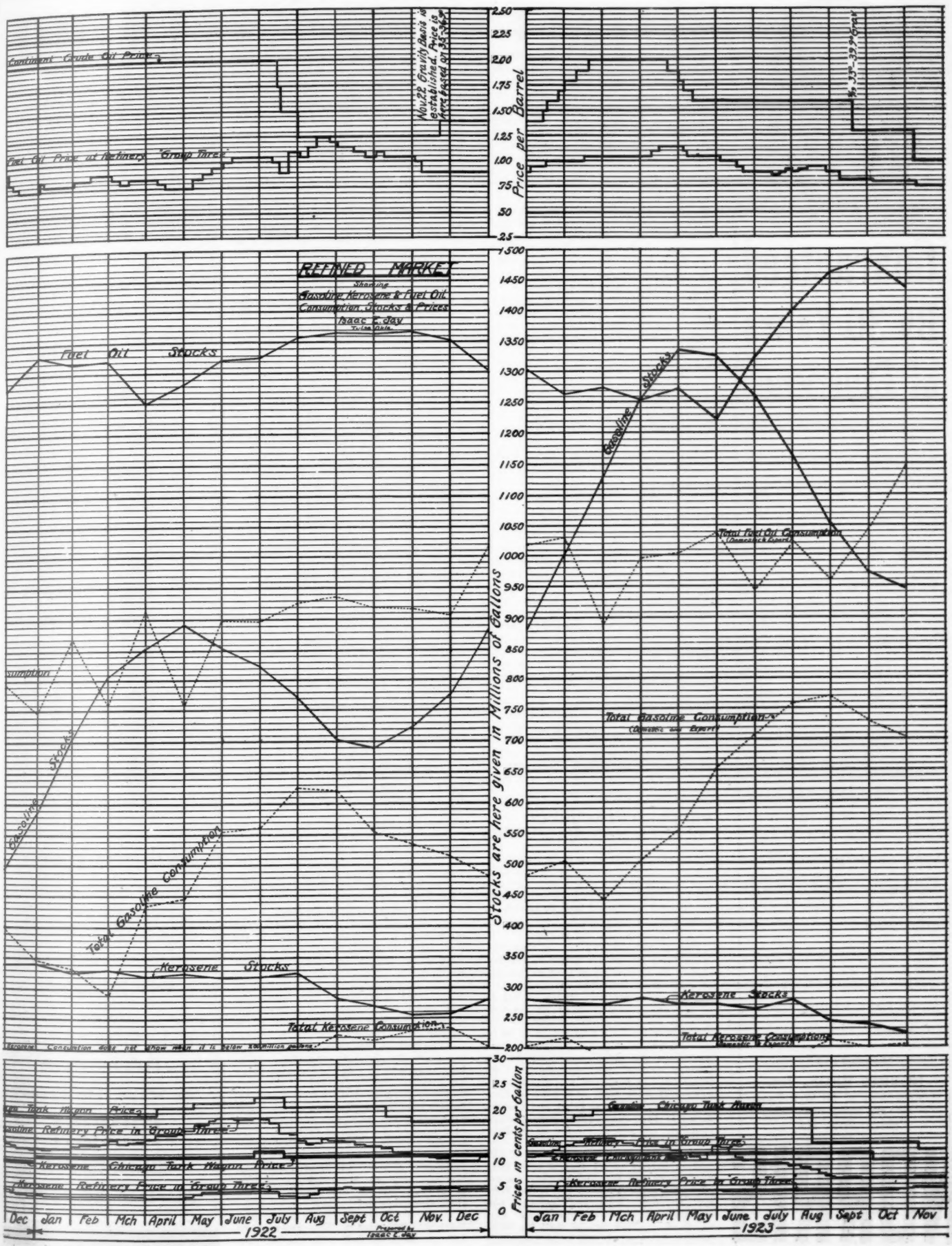
REFINERY MARKET (GALLONS)

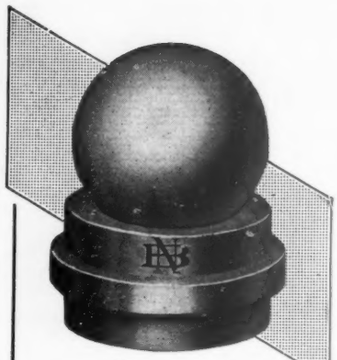
	October	September	Increase
Fuel oil consumption, including exports	1,146,834,499	1,042,540,815	104,293,684
Gasoline consumption, including exports	704,894,150	731,034,872	*26,140,722
Kerosene consumption, including exports	204,432,708	199,281,227	5,151,481
Fuel oil production and imports	1,102,221,520	1,061,562,679	8,237,512
Gasoline production and imports	679,062,000	649,873,483	9,187,087
Kerosene production and imports	191,362,705	193,687,683	*2,341,358
Fuel oil stocks (Nov. 1)	1,436,591,014	1,481,203,993	*44,612,979
Gasoline stocks (Nov. 1)	946,872,683	972,694,832	*25,822,149
Kerosene stocks (Nov. 1)	224,954,009	238,024,012	*13,070,003

*Decrease.


CRUDE MARKET
Total all Stocks
Pipe Line and Tank Farm Stocks
Total Refinery Stocks
Production & Imports
Run to Stills
Total Consumption
Quantities are here given in Millions of Barrels
Nov Dec Jan Feb Mch April May June July Aug Sept Oct Nov Dec
1922
Jan Feb Mch April May June July Aug Sept Oct
1923

Refined Oil Market Giving Consumption, Stocks and Prices


Continent Crude Oil Price
Fuel Oil Price at Refinery Group Three
Nov. 22 Gravity Basis is established. Price is Arrr based on 33-36°
Price per Barrel
REFINED MARKET
Showing
Gasoline Kerosene & Fuel Oil
Consumption, Stocks & Prices
Issac E. Day
Tulsa Okla.
Fuel Oil Stocks
Gasoline Stocks
Total Gasoline Consumption
Kerosene Stocks
Total Kerosene Consumption
Total Fuel Oil Consumption
Total Gasoline Consumption
Stocks are here given in Millions of Gallons
Prices in cents per Gallon
Chicago Tank Wagon Price
Refinery Price in Group Three
Kerosene Chicago Tank Wagon Price
Kerosene Refinery Price in Group Three
Dec Jan Feb Mch April May June July Aug Sept Oct Nov Dec
1922
Jan Feb Mch April May June July Aug Sept Oct Nov
1923



Guaranteed By 30 Years of Experience

Every NO-CO-RO Ball and Seat is backed by thirty years of experience in manufacturing oil well pumping equipment.

Since being put on the market, NO - CO - ROS have consistently proved that they will stand up under the worst acid water and sand conditions. Hard work cannot break them.

Made from a NO-CO-RO alloy steel, NO-CO-ROS are absolutely guaranteed against rust, corrosion or imperfect fits. They will give many times the service of any other make.

Test them on your own well. You can order from your supply house or direct from us.

Manufactured by
NORRIS BROS., Inc.
Manufacturers of Oil Well Pumping Equipment
ROBINSON, ILL.

118

NORRIS

BURNER MANUFACTURERS ASK FOR COOPERATION

(Continued from Page 34)

ing oil prepared themselves at great expense to turn to other fuel.

But these are items of past history, even though recent history. How about the present? How long ago would you guess that these sentences appeared in an editorial of a leading journal of the oil industry? "The campaign for extending the use of fuel oil for heating purposes is growing without any special effort on the part of the oil industry to encourage it. On the contrary, some have even tried to discourage it as undesirable and disturbing to other markets. . . . Farsighted students of the development of oil uses are much less concerned about the temporary overproduction than about the shortage of tomorrow." Your guess may be right, but I doubt it. That was in the issue of October 25, 1923.

Attitude of Oil Industry

What can the oil industry do for the oil burner man? Possibly the oil burner man might say first: "Adopt a different attitude toward the information which you supply to the public. If you must speak of a possible shortage of fuel oil in the dim days of the future, don't say that you are in possession of the gospel truth and that the fuel oil will all be gone in six months or six years. Maybe you don't know. So far it has generally worked out that the Creator has given us great supplies of all natural resources, enabling us to find them as we need them.

The burner man might say next: "Act on a new inspiration, and supply yourselves with sufficient equipment to deliver your product where and when it is needed." He might say third: "Join in determining proper grades and classification of oils for various types of oil burning apparatus."

What can the oil burner man do for the oil industry? We can enable you to sell for fuel any petroleum product for which you have no better use, from kerosene to the residue from your cracking still. We can lead your salesman to live prospects and work with him to bring them in. We can help you to balance sales with production and prevent the accumulation of unwieldy quantities of some of your products which prevent the production of others.

What can we both do for the public? The answer is too large for my paper, but I would suggest that we both read again Mr. Doherty's Atlantic City address.

PROBLEMS FACING OIL BURNER MANUFACTURERS

(Continued from Page 34)

say that we will supply all of the gasoline that is needed. We can say also to the oil burner manufacturers that we will supply all the oil that is needed for house heating purposes.

Considerable Oil Burned

"We do not ask you to take us entirely on faith for we are bound to the fact that there is now being used an average of more than 1,000,000 barrels of oil a day for fuel purposes. Much, if not all of this oil, is used more or less in competition with coal and where its use to the user is not of as great value as its use would be to the household user. Therefore, as the householders of the country demand more and more oil for house heating purposes, a slight raise in price will drive more and more of these other fuel oil users to other and cheaper forms of fuel, making available a corresponding amount of oil for house heating purposes.

"It is true that a great deal of this million barrels of oil that is now being used every day for fuel purposes is not of a character suitable for house heating purposes with the burners now on the market, but practically two-thirds of it either can be used for house heating purposes or can be inexpensively fabricated into a form suitable for house heating purposes.

"It is well to call attention of the burner manufacturers to the important fact that their burners should be developed so that they can use heavier grades of oil. The less volatile the oil, the safer it is, and what is really wanted in a household burner is one that will use any form of oil that will flow, even to a fuel oil which carries all of the still bottoms.

"Oil for house heating should be intelligently applied and especially from the standpoint of fire hazards. The type of oils used for house heating are perfectly safe when used in proper installations. The public is apt to think of the dangers of oil, judging entirely from the more volatile oils like gasoline. Every effort should be made by everyone interested in the promotion of oil for house heating purposes to make these installations absolutely safe and this can be easily done if men thoroughly conversant with fire hazards and petroleum products are consulted."

Heavier Oils Safer

Mr. Wotowich later emphasized Mr. Doherty's statement that the burner manufacturers should perfect their appliances to use heavier oils for home heating. He showed that it was safer, more available and cheaper. He urged the manufacturers to make their burners absolutely safe. He showed that there was a joint problem of adapting the burner to the oil as well as adapting the oil to the burner. He assured the cooperation of the large oil companies in the work of aiding the manufacturers.

W. H. Lambert of the Oliver Oil-Gas Burner Manufacturing Co., St. Louis, introduced B. N. Oliver, president of the concern. Mr. Oliver told about the experimental work by his firm on oil burners during the 10 years prior to 1918. In that year the company perfected a burner which it proceeded to market. He showed the remarkable growth of his company as indicative of the tremendous strides made by the burner business. He declared that in 1918 his company sold only a few installations, valued at $2,000, whereas, during 1923 the same concern marketed 43,000 burners with a total valuation of $1,200,000. For the oil men he showed that the burners sold during the present year by his company would use 16,000,000 gallons of fuel, and that in 1924 all burners made and sold by his company would use 50,000,000 gallons of fuel. He estimated that 5,000,000,000 gallons of fuel would be consumed by domestic burners of all types and makes in the United States in 1924.

L. D. Becker, secretary of the American Association of Oil Burner Manufacturers, Galesburg, Ill., gave interesting figures in defense of the burner makers. "We are told on every hand that the burner business is a coming thing," he declared. "I can assure you that it is here right now. The burners now in use are just as dependable and satisfactory as 90 per cent of the equipment used in the home today for labor saving devices."

Problem One of Service

He condemned what he termed a "lot of loose talk" concerning burners. He declared that a recent report on oil fires showed that 38 per cent had been caused by defective valves and fittings, and showed that tests on burner installations transmitted to the boiler water 80 to 85 per cent of the heat units available, whereas coal could transmit only 35 to 40 per cent available heat.

"The trouble has been one of burner service," Mr. Becker concluded. "The best manufacturers in the business today are selling service instead of burners. The real purpose of the burner manufacturer's association has been to work out a standard fire protection ordinance and to determine the types of fuel best suited to the different burners. This latter problem is now in the hands of the Bureau of Mines." He showed also that the bulk of public interest in oil burning at present was in the domestic rather than the industrial burner.

C. D. Williams of the "Oil-O-Matic" Burner, Bloomington, Ill., asserted he had no fault to find with the oil men

TRIMO

The Tools for hard work

Rugged materials plus superior design and workmanship make TRIMO tools stand up under rough usage.

The Pipe Wrench

Eight Sizes

has many saving features. Insert jaw in handle, replaceable when worn; steel frame that will not break; guards to protect the adjusting nut; hidden spring always in place.

Other tools having the Quality TRIMO Mark are the

Monkey Wrench—Pipe Cutter —Chain Pipe Wrench

Buy of your dealer or write

TRIMONT

MANUFACTURING CO.

(Roxbury (Boston), Mass.

(1)

and that he felt sure that when the burner men created a demand for oil, the oil men as usual would find the fuel. He spoke of need for cooperation concerning price of fuel, however, and asserted that safety was the big factor in the success of the installations. He declared that there would be a regulation or a prohibition of oil burners in the home in a short time and that oil men and burner men alike should see that the right kind of ordinances were prepared by the law makers.

C. E. Baltes, of the Sinclair Refining Co., urged manufacturers to see that storage for installations were adequate and rightly placed, reducing the overhead for the distributors of fuel. C. A. Gustafson asserted that manufacturers were prone to talk fuel on a gravity basis alone, disregarding viscosity and flash requirements. He urged a meeting of minds in this regard. A standardized storage was urged by Charles D. Gauer, of the Sterling Refining Co., who recited some ludicrous incidents in fuel deliveries that had been brought to his attention. William J. Caveney, formerly with the Sinclair Refining Co., gave a plea for the architects and engineers in connection with home burner installations.

The appointment of the committee, to consist largely of Chicago men, was deferred by the chairman to a later date. The purpose of the committee was defined as one to secure the cooperation of the different phases of the new industry and to present a resolution for the consideration of the national meetings at St. Louis.

The following Chicago men have been appointed on the committee:

Refiners—George Moore, Moore Refining Co.; Homer Johnson, Johnson Oil Refining Co.; and Sheldon Clark, Sinclair Refining Co. Jobbers—Charles D. Gauer, Sterling Refining Co.; P. C. Crenshaw, Home Oil Refining Co.; Walter Cuneo, Indian Refining Co. Tank Manufacturers—J. P. Graver, Graver Corp. Combustion Engineers—W. J. Caveney, W. J. Caveney Co.; D. W. Goud, Lynch-Clarrissey Co. Insurance—Charles Whitehair, Whitehair Insurance Co., of Cleveland, Ohio. A heating engineer will be selected later.

SOCIETY IS STUDYING PETROLEUM STANDARDS

(Continued from Page 28)

sub-committees to be tested for various properties and data thus obtained lead to the refinement of methods and the selection of one proposed as a standard.

Other committees are studying petroleum products in certain specific applications, e. g., Committees D-1 on preservative coatings, D-4 on road and paving materials, D-8 on waterproofing materials and D-9 on electrical insulating materials.

Opportunities for Service

Probably some A. S. T. M. standards for materials are finding application in the oil fields today. There is one opportunity, the formulation of specifications for pipe and fittings used in the oil industry. These goods comprise nearly half of all the pipe produced in this country. The exacting requirements of drilling, especially the increasing depth of drilling, have made it essential that acceptable specifications be formulated and that certain problems relating to the quality of these materials be studied.

In June, 1922, the manufacturers of pipe, through the Association of American Steel Manufacturers, requested the society to undertake such specifications. Committee A-1 on steel has developed specifications for boiler tubes and for steel and wrought iron pipe (seamless and welded) that have been widely accepted as the American standard and adopted by the American Society of Mechanical Engineers for the construction of boilers, enacted into law by many States.

The successful development of standards for petroleum products through the cooperative efforts of the institute and the society in Committee D-2, where the petroleum industry is in the role of producer, should be duplicated in the development of specifications for pipe, where the petroleum industry will be in the position of consumer. The A. S. T. M. methods of chemical and physical tests have long been established, and there has been prepared a draft of similar A. S. T. M. standard discussed during this year in a committee of the institute.

The society offers opportunity for the study of many phases, such as effect of composition, methods of manufacture and heat treatment, magnetic and other methods of analysis, and behavior and life of material in service. It should be emphasized that the society does not engage in dimensional standardization per se, and that the consumers themselves would be expected to determine the desired standard sizes. The society would consider chemical and physical properties, methods of testing, marking and inspection, and would incorporate the required dimensional standards. The permissible limits of variation from standard dimensions would necessarily form a part of such a specification.

WYOMING FIELDS

(Continued from Page 40)

asphaltic products here. One product is asphalt paint made by combining asphalt with a naphtha. In the recent excavations of the tomb of King Tut in Egypt asphaltic paint was found to have been used on several figures declared to be as good as when first used.

The Midwest tank farm at Casper with nearly 200 of 80,000-bbl. tanks is due to be filled rapidly with the low priced crude now as is also the big tank farm of the Sinclair Pipe Line Co. at Clayton. The Sinclair Wyoming, the local subsidiary of the Sinclair interests, putting up a seventh 80,000-bbl. tank on its lease in the Salt Creek Field and is starting several wells. Several smaller operators at Salt Creek claim that as soon as the Midwest and Clayton tank farms are filled with crude, the market here is due for a rise.

The Wyoming Petroleum Club met at Casper Tuesday evening. M. J. Foley, superintendent of the Salt Creek Field for the Salt Creek Producers' Association, talked on the object of the association. Geologist W. H. Geis of the Consolidated Royalty, spoke on the Lance formation and its relation in the Rocky Mountain region. Two well known sands are found in the Lance formation, the Teapot and Parkman, and Mr. Geis considers these sands may be found oil bearing in regions where the overlay of earth warrants drilling.

Pipe Line Runs

A large decrease in pipe line runs is noticeable on account of weather conditions and especially trouble due to shipments that congealed in the lines during the recent cold spell.

Salt Creek	114,855
Teapot	4,286
Big Muddy	3,983
Grass Creek	3,211
Elk Basin	1,583
Notches	156
Greybull	42
Rock River	3,500
Lance Creek	3,019
Poison Spider	904
Osage	600
Hamilton Dome	540
Lander	300
Pilot Butte	80
Lost Soldier	4,840
Ferris	100
Cat Creek	4,675
Sunburst	n. d.
Miscellaneous	600
Total	147,174

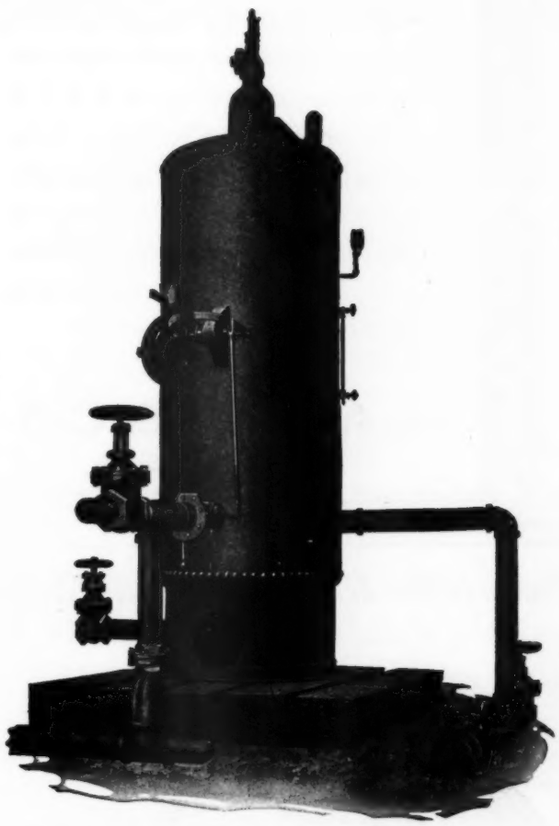
TIME WELL SPENT

The time spent in writing a description of good material which you would like to procure at a reasonable price will be well spent if you mail it to The Oil and Gas Journal Classified Wants Department for next Thursday's issue.

The Classified Wants Section will help you get just what you want, as the students of the Classified Section are great in number and control the buying or selling of a large portion of the material used in the oil and gas industry. Let your fellow reader help you. He can if you put your advertisement in the Classified Wants Section.

IMPROVED TRUMBLE

OIL AND GAS SEPARATOR



The Trumble Oil and Gas Separator keeps the gasoline in the oil by maintaining the gas under pressure when it is leaving the oil, which results in preventing it from expanding and increasing its capacity for carrying the gasoline.

Spreads the oil in a thin body so gas leaves it with the least possible obstruction.

The large spreading surface over which oil flows insures immediate escape of gas from oil and accounts for the Trumble capacity of the Trumble Trap.

Made in different designs to meet all requirements.

Increase your profits by saving the gasoline in your oil by using a Trumble Oil and Gas Separator.

TRUMBLE GAS TRAP COMPANY

804 Higgins Bldg., Los Angeles, Cal.

WILLIAM C. RAE, Sales Manager

Eastern Representative:
C. F. CAMP, Box 289, TULSA, OKLAHOMA

Larkin Improved Sand Pump

(PATENTED)

LARKIN'S IMPROVED SAND PUMP (PATENTED)

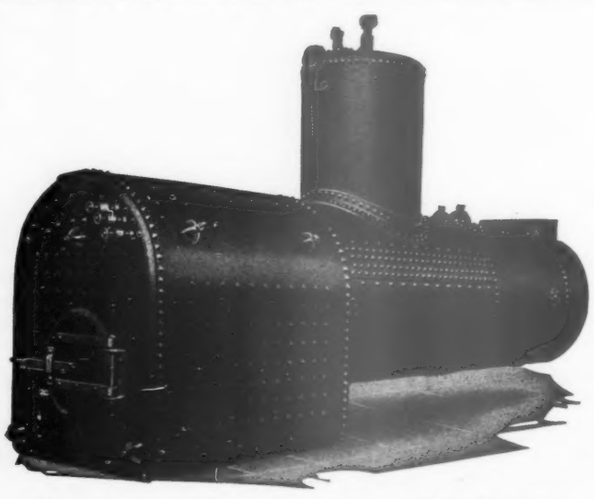
This illustration is the famous Larkin Sand Pump which is found in every oil field throughout the world.

Besides a full line of Drilling and Fishing Tools and Packers of all kinds and sizes, we manufacture the LARKIN Patent Never Slip Pipe Grip, which does away with the old-fashioned way of putting in casing with rope and tongs, and is cheaper, more durable and easier handled.

LARKIN & CO.

Butler, Pa., U. S. A.

Sistersville A. S. M. E. Code Boiler



Also Locomotive Type Portable Boilers

TANKS { Oil, Gasoline and Chemical Storage
Capacities 4,400 to 20,000 Gallons
High and Low Pressure Accumulator
Bolted 100 to 2,000 Barrels
Electric Welded, 40 to 100 Barrels

Steel Plate Construction

Prices and Catalog mailed upon application

Sistersville Tank & Boiler Works

Office and Works, Sistersville, West Virginia

PRICE TREND UPWARD IN GROUP 3 MARKET

(Continued from Page 22)

Natural gasoline manufacturers state that the demand for the absorption grades has improved during the past week and the fact that prices on all grades are now lower than last week, indicates that less distress material is on the market. The leading manufacturers are inclined to be optimistic regarding the price trend in natural gasolines after the first of the year. Some are asking from ¼ to ¾ cent above present spot prices for January delivery. The situation will be aided after the first of the year with storage programs.

Fuel and Gas Oils

No 24-26 fuel oil in buyers' cars is available in Group 3 under 75 cents and the bulk of the product on the spot market is moving above that figure. As was explained in these columns last week the railroads have been buying heavily on the spot market and there is very little material available for immediate shipment. It is known that many refiners are behind in their shipments on marginal contracts, forcing the railroads to buy on the spot market. These buyers are apparently aware of the improved situation in regard to crude, which means higher prices to them on their marginal contracts when posted prices are advanced. They are, therefore, willing now to pay spot prices in excess of the contract basis.

Some railroad contracts are up for renewal before the end of the year. It is known that at least two refiners are seeking a higher percentage basis. In the case of one plant, the basis is a sliding scale in which the percentage would be greatest when the crude price was lowest. It is suggested that with a $1 crude, such as the crude contracts are based on in Oklahoma at the present time, the percentage should be 75 cents. As the crude advances the percentage would be lowered with a minimum of 60 per cent. It is said that the railroads are not inclined to change the contract basis.

Kerosene and Distillates

The kerosene situation is easier after a period of several weeks of exceptional strength. The only purchases of any size during the past week so far as known was 100 cars by the Sinclair Refining Co. (Eastern division). This was for 41-43 prime white. It is understood the price was 4¼ cents. It is known that more kerosene is available, due not only to a slackened demand, but an increased supply. Some plants, due to the higher prices, have increased their kerosene output. The price structure in this Group and the Mid-Continent area generally is firm.

Wax and Neutrals

One of the largest buyers of wax is authority for the statement that no wax is available for shipment from Mid-Continent plants over the balance of the year, and 3 cents is the lowest price quoted. Higher prices have been offered both for December and January shipment. There is no price changes in neutrals. The uniform comment of the few refiners that have lub plants is that the demand is exceptionally strong for this time of the year.

INSTITUTE OPTIMISTIC REGARDING THE FUTURE

(Continued on Page 102)

ing that if the industry did not take the initiative, others with no knowledge of the oil men's problems and not in sympathy with the industry would frame one which might work a serious hardship to the oil business.

Group meetings started Wednesday morning with special sessions for those interested in the utilization of petroleum products, as well as standardization and automotive fuel problems. Registration at noon was 1,200, making it considerably larger than any previous meeting. Discussion of fuel oil burning was treated in three excellent papers delivered by J. M. Johnston, J. E. Pennybacker and W. M. Horner.

Problems of standardization were treated in committee reports by R. D. Gwynne of the Gypsy Oil Co., who made several recommendations to the Institute.

Discussion of the boiler code was given impetus by a report from the committee headed by A. B. Steen and delivered by John T. Kirby of the Oil Well Supply Co., of Pittsburgh. S. A. Guiberson, Jr., head of the committee on standardization of rotary tool joints, reported that the committee was unable to make any specific recommendations yet, although he gave several suggestions which had been considered by his committee. C. L. Warwick reported the work of the American Society Testing Materials in connection with oil field problems and F. B. Foley of the Bureau of Mines, made several suggestions for improvement of field practice.

Using Oil at Sea Under Boilers and In Diesel Engine

By Joseph E. Sheedy

Vice President, Emergency Fleet Corp. Before Fourth Annual Meeting, American Petroleum Institute, St. Louis, Mo., December 12

The fact that the United States is producing the greater part of the oil supply of the world, has resulted in the development of the science of fuel oil combustion to a greater extent in this country than in that of any of our foreign competitors, although oil was used for steam generation in several foreign navies before it was adopted by the United States Navy. The fuel oil testing plant at the Philadelphia Navy yard, the only plant of its type in the world is today recognized as the leader in the art of steam generation by means of fuel oil. The fuel conservation committee of the United States Shipping Board, composed of representatives of the various engineering societies, has accomplished marked results: first, by eductation of the operating personnel and, second, by instituting modifications in burner equipment.

The educational feature has been accomplished chiefly by means of a fuel oil school, established through the courtesy of the Navy at the Philadelphia test plant. Engineer officers of the Merchant Marine are given instruction in the theory and practice of oil burning for steam generation. Operators on the West Coast have requested that a similar school be instituted on the West Coast.

Fuel Efficiency Tests

Tests show it is entirely feasible to obtain with oil-fired boilers efficiencies from 80 to 85 per cent. Actually, however, the efficiency obtained in average practice is 70 per cent or less. The chief factor affecting boiler efficiency is the efficiency of the personnel, and for this reason training and educating the operating personnel in the art of oil-burning and in the handling of the fuel is given special attention by the fuel conservation committee.

The comparison of the two forms of combustion, the oil-fired steam plant and Diesel engine as applied to ship propulsion, means the comparison of a well-established practice with a practice recent in its development but which has all the indications of becoming, in the not distant future, the accepted type, particularly for cargo vessels and long voyages.

Development work on the part of the steam engineers will probably have but very little effect on the adoption of the Diesel drive for future intallations but it certainly will make more imperative the necessity of reduction of the first cost, which is now about two to one in favor of the steam plant. This reduction in cost can only be brought about by standardization of equipment and quantity production methods.

Another prime factor which affects the

relative value of the Diesel to the oil-fired steam plant for marine use is the weight. On short voyages there is no benefit to be gained by the Diesel installation and, in fact, comparisons made between existing steam and several Diesel installations show a differential of approximately 5 per cent in favor of the steam plant in some cases, but on long voyages to the Far East or to South America, when the extra feed water and bunker fuel is taken into account, the weight differential is approximately 5 per cent in favor of the Diesel drive.

The Diesel plant in the present state of development functions much more satisfactorily when using oil of 20° Be. or better, and in practically all cases where an inferior grade of oil has been used operating difficulties and maintenance charges have more than offset the cost differential between the two grades of oil.

The oil-fired steam plant, however, can and does use oil of 10° Be. satisfactorily, providing means are supplied to heat the oil to a temperature where its viscosity will permit it to be pumped, which for transfer purposes is about 200° Engler and also that it can be further heated so as to produce a viscosity of from 2° to 4° Engler just before it reaches the burner. Experimentation has shown that the mechanical atomization depends chiefly on the viscosity and not on the gravity of the oil.

Trial of Humble Co. In Anti-Trust Suit On in Texas Court

AUSTIN, Tex., Dec. 12.—The Humble Oil & Refining Co. Wednesday morning announced itself ready for trial in Travis County District Court on the State's suit alleging violation of the antitrust laws and asking penalties, cancellation of charter and franchise, and perpetual injunction against further operations, on the grounds that a majority ownership and control of the company is in the hands of the Standard Oil Co. of New Jersey, banished from the State by an antitrust judgement 15 years ago.

The trial of the case started Wednesday noon and is expected to last 10 days or longer. Three other antitrust suits are also pending in the same court, against the Gulf Refining Co., The Texas Co., both of Houston, and the Producers Refining Co. of Missouri, whose Texas headquarters are at Fort Worth. These three suits allege violation of antitrust laws in contracts with retailers for lease of filling station equipment at low rental, conditioned upon exclusive sale of the company's products in the filling stations. These cases will be set up as soon as the Humble case is disposed of.

DEATH OF F. W. KUEFFER

F. W. Kueffer, patentee of the Floating Deck, is dead as the result of a motoring accident. With his wife, son and mother he was on his way to visit friends at Ottawa, Kans., when the car was struck by a train, Mr. Kueffer and his mother being killed instantly. His son died within an hour. Mrs. Kueffer was seriously injured but is recovering The funerals of the victims took place at Alexandria, Kans. Mr. Kueffer had worked conscientiously for the past four years, in the face of many adversities, perfecting his invention which has been recognized as of great benefit to the oil industry. A number of months ago he contracted with the Columbian Steel Tank Co. for the exclusive manufacture of the deck and his friends deeply regret he did not live to enjoy the success he so justly earned.

DEATH OF SAMUEL B. BALL

OIL CITY, Pa., Dec. 10.—Samuel B. Ball, secretary of the National Transit Co., died at his home here today. He had been connected with the Transit Co. for 30 years.

Heating of Houses With Oil Discussed Before Institute

By C. H. Chalmers

General Manager, Chalmers Oil Burner Company

Before Group Session on Utilization of Petroleum, December 12, Fourth Annual Meeting, American Petroleum Institute.

Many wish to know where the oil is coming from. Of course we know there is not enough oil so that everyone can use it for home heating. There is, however, a lot of oil. There is twice as much oil produced now as there was 10 years ago. What is to be done with the vast amount of distillate such as the oil burner uses? Will anyone be so bold as to say that there is a better use for this low-grade oil than to use it in the home, there to provide clean and uniform heat for mothers and little children, there to promote health and happiness for all those who can afford to use it?

This low-grade oil is on our hands. It sells for about 3 cents per gallon at the refinery. It cannot be stored indefinitely as the cost of tanks and interest on the money invested will not permit long time storage. The domestic burner at once offers an outlet for this product and puts it to the best possible use. If this oil is to be sold at all it must be sold in competition with the article it displaces. That article is anthracite coal. So, as a result of the oil burner in the American home, we have competition between oil and coal. The result should be more reasonable prices for both, and a better balanced price for all refinery products.

Many persons are under the impression that domestic oil burners are something new. This is but partly true. The combustion end of a domestic burner is very much the same as the commercial burner used in large power plant work. However, in power plant work there is always an engineer in charge and he starts, stops, regulates the burner, and cares for it in every way. In these large plants the oil used runs into thousands of pounds per hour while in the domestic burner a few quarts or at most a few gallons per hour is the usual thing. The domestic burner must start, stop and regulate itself, and when the oil and air are first blown into the furnace it must be automatically ignited by means of a gas pilot, an electric spark, or an equivalent device. If the burner should be started without the ignition being in operative order, provision for taking care of the unburned oil must be made. This provision for taking care of the unburned oil upon failure of the ignition system, constitutes what is knwon as the safety devices of the burner.

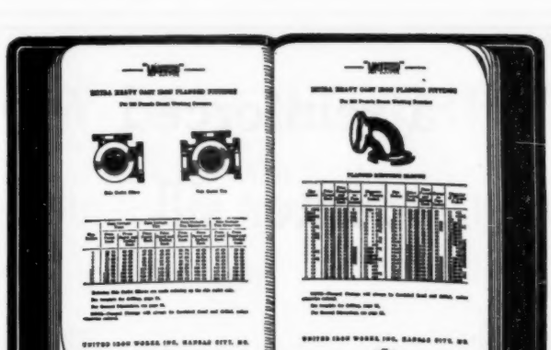
There are three things that distinguish the domestic burner from the commercial type of burner used in large power plants. They are the automatic start and stop features; automatic ignition; and safety devices for stopping the oil feed in ease ignition fails.

REFINERS ASSOCIATION MEETS

ST. LOUIS, Mo., Dec. 12.—The board of directors of the Western Refiners' Association in executive session here today decided to withdraw the association from all activity in railroad freight rate cases excepting where there is an unanimity of opinion among the members and the traffic department of the association will hereafter devote itself only to such matters as affect the whole membership. The place of holding next year's convention will be left to the members to whom a questionnaire will be sent.

POWELL DOWN TO 106,000 BBLS.

CORSICANA, Tex., Dec. 12.—The decline in production in the Powell Field continued unchecked Tuesday morning, the total output reaching the new low figure of 106,000 barrels from 578 produring wells.



Get Your Copy of This New "UNITED" Producing and Refining Catalog

Every oil producing and refining company should have a copy of this **new, big, valuable** loose-leaf catalog. Besides showing a complete line of Fittings and Oil Producing and Refining Equipment manufactured by this company, it also contains much valuable information for the oil industry and its related branches.

Write today for your copy of this valuable catalog. It will be promptly sent, without obligation.

UNITED IRON WORKS, Inc.
Tulsa **KANSAS CITY, MO.** **Dallas**

"UNITED" IRON WORKS INC. FOR SERVICE

919

Services Available for the Oil and Gas Industry as—

CONSULTING ENGINEERS in all matters pertaining to:
Pipe Line Transportation of Petroleum and Natural Gas.
Recovery of Gasoline by Absorption or Compression.
Compressing and Booster Plants.
Gas Engines and Compressors.

CONSTRUCTING ENGINEERS and CONTRACTORS, specializing in:
Pipe Lines for Gas and Oil.
Compressing and Booster Plants.
Gasoline Recovery Systems, Absorption and Compression.
City and Inter-City Gas Mains.
No Contract too large to complete with satisfaction and dispatch or too far away to handle.

MANUFACTURERS and DISTRIBUTORS of Gas and Oil Specialties, including:
Heat Exchangers.
Gasoline Recovery Equipment.
Compressing and Booster Station Equipment.
Reeves Vertical Gas Engines and Compressors.
Hope Biplane Compressor Valves.
Hope River Clamps and Re-inforced Joints.

HOPE

in three excellent papers delivered by J. Another prime factor which affects

a reinforced center sill

456,000 ft. lbs. stronger than the type sill in general use, and constructed materially lighter. Patented and used only in "Pennsylvania" Tank Cars.

THE PENNSYLVANIA TANK CAR COMPANY
(Builders of Tank Cars)

Pennsylvania Car Company
(Railway Cars Built, Rebuilt and Repaired)

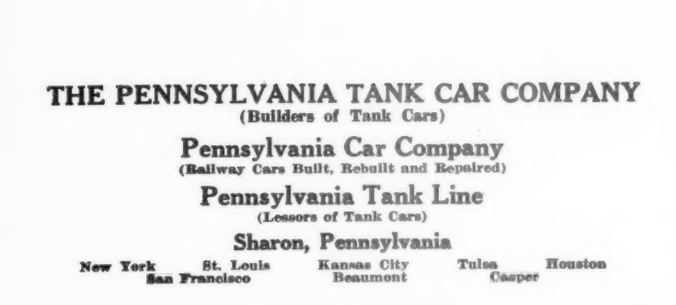
Pennsylvania Tank Line
(Lessors of Tank Cars)

Sharon, Pennsylvania

New York St. Louis Kansas City Tulsa Houston
San Francisco Beaumont Casper

Lightning Long Stroke Jacks

Stuffing Boxes
Casing Heads
Safety Casing
Head Tops



Patent Applied for

Variation of stroke from 12 to 30 inches.
Adjustment of stroke made by turnbuckle.
Straight lift on polish rods.
No agitation of oil by cutting.
Best jack on the market for wells making water.
Lightning Pumping Powers.

OIL FIELD SUPPLY DEPT.
KANSAS CITY HAY PRESS CO.
Kansas City, Mo.

FUNDAMENTALS OF OIL SITUATION OF THE U. S.

(Continued from Page 37)

sented a total investment of close to $150.000.000. The unusually large average investment, per refinery, clearly indicates that a few companies have built huge, complete, "run down" refineries—and that the Pacific Coast area, in 1922 at least, did not depend upon the rest of the United States for refined products.

These refineries, in 1922, made over 693,000,000 gallons of gasoline while the Pacific Coast area consumed over 522,000,000 gallons, based on 510 gallons per car and truck. Because of its marvelous highway system and the great numbers of transient tourists it is generally conceded that the annual consumption per car on the coast is substantially greater than in the three other areas. Hence the Pacific Coast area in 1922 probably consumed practically all of the gasoline that it made.

How completely this condition changed in 1923, during which California will have produced about 100,000,000 barrels more oil than in 1922, and what that "flood of oil" has meant to the Mid-Continent, is still a matter of painful knowledge to the producers and refiners of the Mississippi Valley who, as a whole, have operated at a loss during 1923.

That Santa Fe Springs, Signal Hill and Huntington Beach have passed the peak there is probably no question. Torrance is the present menace for 1924, and its shadow lies dark across the Mid-Continent's pathway in its journey "back to normalcy." Optimism is the stuff that wildcatters are made of, and right now, when the skies are slowly clearing, if our California wildcatters can only be prevailed upon to wait until the market has digested some more of its overdose of crude oil and gasoline, the entire industry will enjoy a good substantial year in 1924.

Rocky Mountain Area

This area contains 3 per cent of the population of the United States and 3 per cent of its cars and trucks. In 1922 it produced 5 per cent of the crude oil, or over 28,000,000 barrels—an average of 78,000 barrels a day. It contained 30 refineries with a total rated capacity of over 125.000 barrels a day. At the close of 1922 there were 25 refineries operating with a throughput of over 68,000 barrels a day. While only five refineries were actually shut down there was a total shut down capacity of over 58.000 barrels. In other words, the refineries in the Rocky Mountain area were operating at about 50 per cent capacity. These refineries represented an investment of approximately $70,000,000. Except for shipping gasoline in tank cars this area has been "isolated" much more completely than the Pacific Coast area with its tanker transportation and the Panama Canal.

The refineries of this area, in 1922, made about 570,000.000 gallons of gasoline, while there was an indicated consumption of probably not more than 180 000 000 gallons. This left a surplus of about 400.000.000 gallons for which there was only one market—East.

In 1923 the production of crude oil and gasoline in this area will be substantially greater than in 1922—but the consumption of gasoline will not be much greater. Hence 1923 will contribute a bigger surplus than 1922.

Today its production of crude and the capacity of its refineries are about equal—and this situation affords the background for the strategy of the Sinclair pipe line, now under construction from Teapot Dome to the main line at Freeman, Mo. Entirely disregarding Teapot Dome—and whether or not it ever produces another barrel of oil—the Rocky Mountain area is today producing at least three times as much gasoline as it has a regional market for. That the production of crude oil within this area will be increased in 1924, and thereafter, there can be little doubt. To increase the refining capacity along with the increasing oil production would be sheer economic folly. The real solution is the pipe line which will transport the crude to eastern refineries, in the heart o' the eastern markets. With keen foresight Mr. Sinclair and his associates are building this line — a testimonial to "that business wisdom which makes big companies big." This is the type of organizing and operating ability which, shackled by government regulation, would fall helpless.

Mississippi Valley Area

This area contains 21 per cent of the population of the United States and 28 per cent of the automobiles. It produced 62 per cent of the crude oil in 1922, had 50 per cent of the refining capacity with one-third of the total value, made over 2,500,000,000 gallons of gasoline, and had a surplus above the indicated consumption of about 1,200,000,000 gallons.

The average production of crude oil in this area, which for all practical purposes may be called the Mid-Continent, was about 935,000 barrels in 1922. The rated capacity of its 336 refineries was over 1,250,000 barrels a day. This is one-third more refining capacity than would have been necessary had every refinery in the Mid-Continent operated to capacity 24 hours a day for the entire year of 1922. Of these refineries 125 were shut down December 31, 1922, while over 670,000 barrels of capacity were shut down. About the same general condition as to capacity and throughput prevailed during the greater part of 1922—and to a greater extent during 1923 when the eastern markets were absorbing the flood of oil from California.

Stated in painful but plain English the Mid-Continent area is dangerously overbuilt. This danger is constantly emphasized in the struggle for crude oil and in the marketing of gasoline. During 1922 only about half of the Mid-Continent refining capacity was operating—yet there was produced almost twice as much gasoline than there was a regional market for.

It is undoubtedly true that a very large percentage of the Mid-Continent refineries that have been "shut down" for the last year or so, or longer, will never operate again—but will eventually find their way into the scrap heap, with an almost total loss to their stockholders who in many instances were victims of Get-Rich-Quick Wallingfords in the guise of refiners. That this type of promoter is partially responsible for the strained conditions in the Mid-Continent during the past few years there can be no doubt. When the novice, the crook and the promoter "went into refining" they not only kept the investment world stirred up about "the miraculous profits of the refining business," but when the refinery was completed — if it ever was — they threw another monkey wrench into the machinery when they went out to buy crude oil — and a bigger one when they went out to sell gasoline — if they ever had any gasoline to sell.

Eastern Area

This area contains 70 per cent of the population of the United States. It had 61 per cent of the cars and trucks at the beginning of 1922, it produced less than 8 per cent of the crude oil of the United States, it had 29 per cent of the refining capacity with 45 per cent of the value of the refineries in the United States, it made 38 per cent of the gasoline in 1922 and consumed about 61 per cent of all the gasoline used in the United States.

The daily production of crude oil east of the Mississippi River is about 114,000 barrels. The 151 refineries in this area have an aggregate refining capacity of over 700,000 barrels a day, or about 600,000 barrels a day more than the production of crude oil. In 1922 this "shortage" of crude was supplied by the Mid-Continent and Mexico. California tankered practically no crude oil to the Gulf Coast and Atlantic Coast refineries in 1922, and practically none of her refined products went East last year.

Of the 151 refineries in the eastern area 133 were operating December 31, 1922, with a throughput of over 500,000 barrels a day. Looking at the figures

under the map you will note that the eastern area, with one-eighth as much crude oil production as the Mid-Continent (114,000 barrels daily against 935,000 barrels), was refining almost as many barrels of crude oil as the Mid-Continent. On December 31, 1922, the Mid-Continent refineries, with 50 per cent of the rated refining capacity of the United States, were furnishing 37 per cent of the throughput and 72 per cent of the shut down capacity. In other words, there was over two and a half times as much refining capacity shut down in the Mid-Continent as in the three other areas combined—674,325 barrels against 268,870 barrels.

Refinery Investment

The eastern refineries represent an aggregate investment of about $450,000,000. Comparing the total refineries and total investment of the East with the Mid-Continent we find less than half as many refineries in the East, with an aggregate investment one-third greater. By comparing average investment, per refinery, of the Mid-Continent with the East we find the smallest investment per refinery in the Mid-Continent where skimming plants predominate, while eastern refineries, and especially those on the Atlantic seaboard, are largely of the complete run-down type.

In 1922 the eastern area produced over 2,300,000,000 gallons of gasoline and consumed, in round numbers, about 1,000,000,000 gallons more than it produced. Ignoring California's surplus gasoline in 1922, if indeed there was a surplus, we find that the Rocky Mountain and Mid-Continent surpluses exceed the eastern shortage.

Referring to the table "Gasoline in 1922" in the first part of this article, and taking the United States as a whole, the difference between production, plus imports for 1922 (6,258,706,049 gallons) and consumption plus exports (5,961,000,320 gallons) is 297,705,729 gallons, which amount represents the net increase in stocks of gasoline during 1922. As we started the year with 586,087,132 gallons of gasoline on hand, we therefore ended the year with 883,792,861 gallons on hand. As the consumption during the year was over 5,366,000,000 gallons and the average monthly stock on hand about 800,000,000 gallons it follows that we "turned our stock" of gasoline more than six and a half times during the year 1922, which, by the way, wouldn't be a bad record for most any manufacturing business.

Disregarding stocks of crude oil on hand January 1, 1922, also our imports and exports during the year, we produced 551,000,000 barrels of oil and consumed 591,000,000 barrels, or 40,000,000 more than we produced. However, on January 1, 1922, we had on hand 190,000,000 barrels of crude oil, we imported 124,000,000 barrels, almost entirely from Mexico, and exported about 10,000,000 barrels — all of which made it possible for us to "consume more oil than we produced and at the same time export 2 per cent of our production to foreign countries. During 1922 we carried an average stock of about 245,000,000 barrels of crude, or an average of 153 days supply. This gave us an average crude oil "turnover" of two and a fourth times in 1922, against a gasoline turnover of six and a half times.

East Is Only Market

The Mid-Continent, the Rocky Mountain and the Pacific Coast areas have all been "in the same boat" in 1923—each produced both crude oil and refined products far in excess of its regional needs; each went out looking for a market. There is only one major market in the world today whose production of crude and refined oils is less than its needs. That area lies east of the Mississippi River, and, if the figures on production, consumption and stocks of crude and refined products for this area for 1923 are even "approximately accurate" then the eastern area ought today to be somewhere near the danger point of saturation in its attempt to absorb the delivered surpluses from the Mid-Continent, the Rocky Mountains, California and Mexico, all at the same time.

"Market" is the real support of industry, and the point towards which all products should travel, but in times of overproduction this support shifts over to "storage" and "additional investment." This situation, even though temporary, is an open invitation to the man without storage and without additional capital to begin "moving his stock" by slashing prices. The psychological reaction of price-cutting soon spreads to his neighbors—and the public goes joyriding on profitless gasoline. It is perfectly obvious that the producer and refiner can not continue operating at a loss—and it is equally obvious that "the public" has absolutely no right to expect them to do so.

After a friend has been dangerously sick for months, it is a source of great relief and joy to know that he has "turned the corner" and is on the road to recovery, but he doesn't get up the next day and chop a cord of wood, just because he "turned the corner."

URGE USE OF ELECTRICITY AT PETROLEUM INSTITUTE

(Continued from Page 20)

reliability, convenience, and speed regulation.

Comparison serves to show that motors are more economical, even without including any charge for gas or water for the engines, without taking account of the greater percentage of time lost from shutdowns of engines and capitalizing the resulting loss in production, and without capitalizing the decreased number of pulling jobs due to reduction of rod trouble when motors are used.

Records of operating companies do not show that as many pumpers are necessary for electric as for gas engine operation. While it is true that the pumper's duties include care of the rig as well as of the power equipment, he spends a larger part of his time on the engine than on the motor.

It is assumed that gas for the engines can be obtained from the lease without cost. Often, however, the gas has a market value or must be purchased, in which case the cost must be charged against the engine. Similarly, no charge is made for circulating water, although in many cases it must be purchased or pumped at considerable expense.

For a fair comparison of engines and motors it is unsafe and misleading to cite bad examples which are due to lack of proper care and attention or to poor management, as they do not represent the normal condition which a stable oil company will strive to maintain for the purpose of obtaining the maximum return to its stockholders. Neglect and abuse of the equipment is just as fatal to the success of the gas engine as to that of the electric motor.

OILY WATERS FATAL TO DUCKS

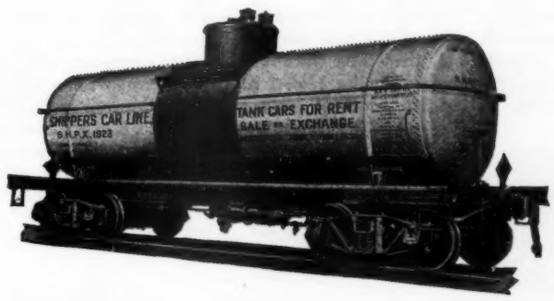
MONROE, La., Dec. 10.—Crude oil waste from the Arkansas oil field, flowing on the surface of the Ouachita River, is causing the death of thousands of wild ducks, according to hunters along the stream north of Monroe. The oil gums the feathers of the birds, making it impossible for them either to fly or swim. Persons living near the river are discarding guns for the easier method of killing them with sticks and many have been caught alive. Attempts to save the lives of the birds by washing the oil from them with gasoline have demonstrated the treatment is fatal.

AUTO BUSSES IN CHILI

The large growth of the Santiago, Chile, bus service within a short time has been noteworthy. Although rates are double those on electric street cars, the buses are giving the latter keen competition. On the main streets and avenues large 40-passenger machines are in operation, but on the smaller thoroughfares a three-ton truck with a body for about 20 persons dominates the traffic. It is estimated that 50 busses are in circulation in Santiago, and the number is on the increase.

LOW SELLING PRICES

REASONABLE RATES
ON SHORT OR LONG TERM LEASES



Just purchased another lot of over 400 Tank Cars—standard capacities—some "clean"—others dirty—ready for spot shipments to all points.

SHIPPERS' CAR LINE, Inc.
165 BROADWAY, NEW YORK

Service is the Secret of our Success

TRADE MARK
"PALMETTO" PACKING
REG U S PAT OFFICE

More Economical than other packings because it lasts longer

"Palmetto" has no equal under high pressure superheated steam and compressed air pressures.

BRAIDED for rods.
TWIST for valves.

Send for free samples to test.

GREENE, TWEED & CO.
Sole Manufacturers
109 Duane St. New York

YOU CAN DEPEND "TOLEDO" ON GENUINE "TOLEDOS"

No matter how hard the work may be, or how severe the working conditions, genuine "Toledo" tools can be counted on always to render the same dependable service you have learned to expect from them.

Genuine "Toledo" tools have no equal. Simple in construction, with no complicated parts to clog with dirt or get out of adjustment, they are durable. Light, compact and portable they may easily be taken to the job anywhere and operated. They are tools of no regrets. When ordering look for the name and trade-mark, above, and accept no substitutes. Only GENUINE "TOLEDOS" will give you "Toledo" service.

This is the "Toledo" No. 2 tool. It threads 2½" to 4" pipe, is light, compact and, as shown in the illustration, threads pipe anywhere.

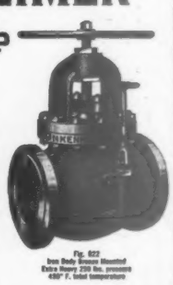
THE TOLEDO PIPE THREADING MACHINE CO.
Toledo, Ohio
New York Office:
50 Church St.

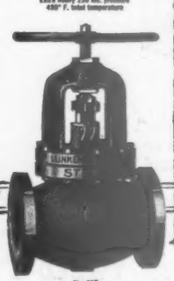
LUNKENHEIMER
Globe and Angle Valves

Small or large, for low or high pressures or temperatures, of Bronze, Iron Body Bronze Mounted, Steel Monel Mounted, or of All Iron for handling fluids which attack bronze alloys, a design particularly adapted for the purpose can be found in the comprehensive line of LUNKENHEIMER GLOBE AND ANGLE VALVES.

The completeness of the line makes possible standardizing on Lunkenheimer Valves with that resultant prolonged satisfactory service and economy of maintenance provided only by the Lunkenheimer method of manufacture.

For complete information write for a copy of Catalog 58. J A





"America's Best since 1862"

THE LUNKENHEIMER CO.
"QUALITY"
LARGEST MANUFACTURERS OF HIGH GRADE ENGINEERING SPECIALTIES IN THE WORLD
NEW YORK CHICAGO CINCINNATI, U.S.A. BOSTON LONDON
EXPORT DEPT. 120-126 LAFAYETTE ST., NEW YORK

LUNKENHEIMER PRODUCTS

A comprehensive line of Engineering Appliances offering a type and size to meet all prevailing conditions.

VALVES
Bronze, Iron, Steel; Globe, Angle, Cross, Check, Gate, Throttle, Non-return, Blow-off, Pop Safety, Relief, Whistle, etc.

BOILER MOUNTINGS
Non-return, Pop Safety and Blow-off Valves; Water Columns, Water Gauges and Gauge Cocks, Injectors, Low Water Alarms; Fusible Plugs.

LUBRICATORS
For Steam, Gas, Gasoline Oil, Compressor and Pump Cylinders; Gravity Feed or Hydrostatically, Hand or Mechanically Operated.

OIL AND GREASE CUPS
Glass or Bronze Body Oil Cups with or without Sight-feed; Automatic Feed, Cup or Plunger Screw Feed Grease Cups of Bronze, Iron or Steel.

Whistles, Cocks, Pipe Fittings, Unions, Ejectors, Air Nozzles, Automotive Accessories, Etc.

1300-23-91

NICHOLAS ADVOCATES GREATER COOPERATION

(Continued from Page 19)

dled if that department was a complete unit in itself.

Accounting should be so handled that misunderstandings, charges of manipulation and bad faith would be practically impossible. The corpse of legitimate profits, who bled and died in bloody battle with bad management in one department, should never be interred in the consolidated balance sheet without a properly constituted "post-mortem."

No one can properly question the right of any one of these divisions to make a proper and adequate profit, and by profit I mean net profit after setting up all proper safeguards in the line of depreciation, depletion, etc., but there can be a very proper question raised concerning the propriety of drawing on the earnings or profits of one's division to offset the losses in another division, particularly if the losses are the result of uneconomic and unsound functioning in that department.

Over-Competition

It is needless to state to such a representative group of men as are gathered here that our industry at the present time is suffering from over-competition in production, in refining and in distribution; competition which is so keen and so over-developed as to almost preclude personal friendships between men in the oil industry who come into personal competition, one with the other, and yet in spite of this over-production, whose very keenness has developed bitter personal animosities and strife, we are constantly pilloried, constantly investigated and at all times suspected of being something else by a skeptical public.

The dramatic bitterness of our price wars is considered by many as pure scenic effect. The bitter and remorseless fight for crude oils has made multi-millionaires out of land owners (the honest farmer, if you please,) at a fabulous inudstrial loss.

Most men engaged in industrial accomplishments are held, not by the monetary regards (although we will concede they are highly important), as they are by the love of accomplishment, which is more satisfying than to excel in any known line of sport, and yet in those things which we consider strictly games of sport, we have our rules for behavior which bar every kind of unfair advantage and give honor and praise to skill and true sportsmanship.

Is it not about time for us to bring some of these rules of conduct into the oil business and can we not all gain by so doing?

Whether we like to acknowledge it or not, every branch, every division of this industry eventually fries in the other's fat.

None of us can successfully hold aloof on the theory that the other fellow's troubles are none of ours and no one gains any permanent advantage as the result of the frying process, not even the public.

Industrial Allies

Every day it is becoming more apparent that we cannot afford to be anything else but industrial allies, although we must remain active business competitors and the competition must be of the kind the public will consider adequate and comprehensive.

We must not only sell service and personal satisfaction, but we must clearly and distinctly sell the idea and thought that our competition is basic and not open to deep-seated suspicion and subconscious public contempt.

It is the underlying distrust regarding the genuineness and the adequacy of the competitive situation which reacts to our disadvantage and results in investigations, in regulatory laws and hurtful suspicions.

The machinery for the establishment of harmonious industrial relations is immediately at hand. Nothing but the spirit is lacking. We have this great Institute, as well as refinery organizations and jobbers' organizations, but, let me repeat, up to date the spirit has been lacking.

We have many immediate and pressing common problems; problems we should work out as an industry not as groups or competitive subdivisions of that industry.

Fuel Oils Should Be Developed

Fuel oils should be developed and improved and marketed in volume and at prices just as satisfactory as those obtained for gasoline. It is ridiculous that our fuel oils and distillates are sold at a loss because a great industry with billions of invested capital cannot or will not intelligently coordinate and cooperate.

Personally, I have been interested in oil for domestic heating for over 15 years and I know that distillates can successfully compete with coal at prices that will average fully 75 per cent more than we are obtaining for these distillates today, and yet we are bleeding our industry white because we term these things "by-products" instead of recognizing them for what they are, essential necessities for the production of which we should be just as definitely running our refineries and adapting our processes for their production as we ever have done for the production of gasoline or lubricating oil.

Patent Situation

For instance, the patent process has always seemed to me a matter for harmonious industrial solution rather than a problem to be adjusted between Shylock and the Judge.

Please parodn me here for stepping out of my role of jobber in an effort to express a view a great many of us hold who are in the jobbing division: the entire industry might be better off and the public better served if we had a patent division or pool into which every worthy refining improvement was put and into which pool the various refining organizations paid a royalty for the use of whatever patent or combination of patents they adopted. This would not only tend to more completely develop and improve refining methods, but it would guarantee proper and adequate reward to the patentees and pay these rewards based on the industrial value of the patent and not based on its appraisal as a deadly industrial weapon.

Public Education

Another great and important problem which could and would be answered if we develop harmonious industrial relations is publicity—public education—regarding the oil industry, and no pains should be spared in an effort to bring about some form of coordinated industrial publicity.

The Jobber

The organization which I head, the National Petroleum Marketers' Association, is primarily a jobbing organization. Economically, we are just as essentially a necessary branch of the industry, just as definitely producers in the full meaning of the word, as is the producer of crude petroleum, the operator of pipe lines, the refiner or the manufacturer.

The strength of the jobber lies in his personally owned and personally conducted business. Our function is a business in itself and it is our specialized development of the sales and marketing machinery—it is our careful study of overhead and marketing efficiency, which acts as a check and a safeguard to the natural tendency of advancing costs and advancing overhead in the larger integrated companies.

What may be gained by integrated or chain operation is offset by our direct advantage in personal ownership and management.

Our industry unquestionably needs the big companies to carry the big load of flush production and to assist in pioneering new fields, but the big companies just as surely need the highly specialized, non-integrated organizations.

Each stirs the other on to greater accomplishments; to whittle down costs; to pioneer for new fields where big companies do not dare to venture; to develop the art of refining and marketing from the urge of "Mother Necessity;" to be the spur and the balance wheel, one to the other.

PETROLEUM INDUSTRY NEEDS SALESMANSHIP

(Continued from Page 23)

resenting an industry much smaller than ours, expended last year, collectively, more than $3,000,000 and I understand they are expending this year in excess of $5,000,000.

The oil industry except for certain individual efforts—which are almost negligible—does not attempt to either develop new uses for oil nor to extend the application of these uses. It merely supplies oil for uses developed by others. Do we simply lack vision or are we just plain pikers?

Our industry is periodically threatened with bankruptcy for lack of ability to sell the oil produced, and yet the total quantity of oil produced is puny in comparison with the total fuel needs of the entire country.

We can foresee uses for oil that would absorb $1,000,000,000 a year in excess of what we now produce and yet what we can foresee is practically small compared with what might be realized if we were to put on an intensive sales campaign.

If every man in this room were to sit down now and list all of the uses of oil which he can foresee at this time we would by an intensive sales campaign undoubtedly develop twice as many uses as the entire list we could now collectively make up.

For every dollar that the entire oil industry has ever expended in its entire history for developing the utilization of oil, there has probably been spent during the past year more money by manufacturers on the development of house heating burners than the entire expenditures for all purposes by the oil industry in the sixty odd years of its existence.

The biggest thing now on the horizon is the use of oil for household heating. This has been brought about not only without the help of the oil industry, but in many cases against the opposition of the oil industry, and yet thousands of homes are already being heated by oil, and the fuel used for domestic purposes throughout the country would on an energy basis be almost equivalent to our entire production of oil at this time.

Clubs are being formed in the various cities by the men engaged in producing the apparatus used for household heating, and I predict that before March 1 of next year these clubs will have a membership in excess of the membership of the American Petroleum Institute.

There has been no time for several years that this field for the utilization of oil was not open to the oil companies, and yet the oil companies have been the hardest to convince that people could afford to buy oil for heating their homes. Every oil man seems to want to compare the cost of oil with the cost of coal. Coal at best is far from satisfactory for house heating, but the cost of coal is only one item of expense that the householder must pay, and often the care of his furnace and the removal of his ash amounts to much more than the cost of his coal, and these items are saved if he uses oil.

Other Fields for Oil Use

All industrial processes requiring a high temperature offer an opportunity for oil at prices greatly in excess of the price for coal. This is particularly true with smaller furnaces. I am inclined to thing that every railroad could afford to pay as much for oil per B. T. U. as for coal, although they may not realize it, and if they do realize it they may not admit it, but the one industry that ought to know what a railroad can afford to pay for oil is the petroleum industry, and if the petroleum industry knows this—and I have never seen any evidence that they do know it—and if any man in the petroleum industry knows what the railroads can afford to pay for oil I do not know who that man is.

The same thing is true of ship propulsion, but in the case of ship propulsion oil probably has a different value for every ship and every route and perhaps for every run. Oil permits of a great saving in cargo space which may or may not have its full value for every run of the ship and perhaps in many cases has no value whatever.

There is no question but what the farm can be entirely motorized and to the great advantage of our agricultural economics, but we will all be dead if we wait for the farmer and the motor manufacturer to develop all of the applications of the motor to the farm and then to bring about their adoption by the entire agricultural community.

The matter of control of production hits every feature of our business; in fact, we cannot ever develop the proper utilization of oil until we can control production. We will never be able to realize ultimate sales, secure preference for oil over other fuels and have satisfied customers and the confidence of the public until we can stabilize oil supplies and prices.

Recommends Program

The program I have been recommending for some time is this:

1. That we make such changes in the basic methods of producing crude oil that the raw product will be located in vast quantities and blocked out in large amounts so as to be readily accessible and under conditions whereby it will not have to be forced upon the market in excess of what the market can absorb.

2. That we stimulate every oil company to develop all possible demonstrated applications for the utilization of oil.

3. That we give support, encouragement and assistance to inventors and manufacturers of all oil burning apparatus.

4. That the industry as a whole shall contribute and cooperate to develop such uses for oil, as the individual companies for competitive reasons are not warranted in doing.

If this program appeals to you I hope you will give it your enthusiastic endorsement and your determined support. Results can only be secured by the oil industry by every man in the oil industry contributing his share.

WESTERN BANK SUPPLY CO.
Manufacturing Stationers
High-Grade Office Furniture
Filing Cabinets—Safes
Log Books—Township Plats—All Standard Forms
Lithographing Embossing
Engraving Printing
"THE HOUSE OF QUALITY"
317 West Main St. 4th and Boston
OKLAHOMA CITY TULSA, OKLA

Capital Abstract & Realty Company
W. S. Bell L. B. Norton
J. F. Patterson
Okmulgee, Okla.

DAWSON TOWEL SUPPLY
Aprons, Towels and Jackets for Rent
Towel Service for Office $1.50 per Mo.
Phone 2185 Tulsa, Okla.

DICKEY-ASHBY-FOUNTAIN CO.
General Insurance
Derricks, Tanks and Contents Insured
1114 Atlas Life Bldg., Tulsa, Okla.

GEO. W. HENRY, Printer
"Better Printing"
Phone O-238
112 W. Second St. Tulsa, Okla.

LAFE SPEER ABSTRACT CO.
General Abstractors
J. A. Boyd, Pres. and Mgr.
11 S. Park St. Sapulpa, Okla.

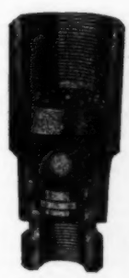
SAND SPRINGS WATER CO.
Pure Spring Water
Distilled
Phone Osage 700 Tulsa, Okla.

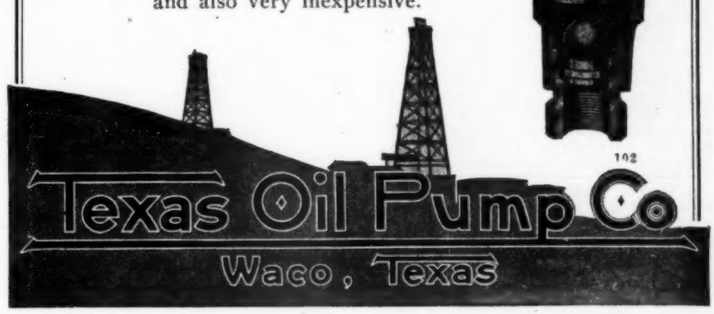
Place your order for Ice with the
TULSA ICE CO.
Phone 12, 4 N. Detroit, Tulsa, Okla.

An Outstanding Feature
of the
ROARK
STANDING VALVE

The Roark valve is regularly furnished with a California special type ball and seat which will operate at any speed without pounding the seat, thus giving longer life than the ordinary ball and seat.

The seat used is of standard size and the seat frame is renewable and also very inexpensive.





WHAT DOES MOVING COST YOU?

Freight and hauling are big factors in drilling cost.

In putting drill outfits in foreign fields, ocean rates mount fast, and hauling heavy supplies to wildnerness camps often causes serious delay.

Peons carrying parts of a diamond drill, Mexico

SULLIVAN DIAMOND DRILLS

are the most compact and the lightest oil drilling rigs you can select. They don't use large, heavy casing, even on deep holes. An outfit for 2500 to 3000 feet will weigh only 20 to 30 tons, in small units, as compared with 60 to 125 tons for other types of drills.

The diamond drills themselves may be sectionalized, if desired.

Sullivan Diamond Drills are not only the cheapest to put on the ground, but the cheapest to operate. The cores which they secure furnish precise, complete knowledge of oil deposits which is invaluable for geologist, producer and investor.

Ask for Bulletin 1580-O.

SULLIVAN MACHINERY COMPANY
(Diamond Drill Builders Since 1875)
88 East Adams St., Chicago

25 CENTS per line first insertion; 15c per line each additional insertion. Cash in advance.

CLASSIFIED WANTS

COPY must be in our office Friday prior to date of issue. Average 6 words to the line. Cash in advance

LEASES—PRODUCTION

5,500 ACRES of land located in central Missouri for sale cheap; good investment. See Arthur Eaton, Warsaw, Mo.

FOR SALE—At bargain prices, oil and gas leases, production and royalties in the Kentucky shallow fields. For full particulars and maps, address W. P. Harley, Bowling Green, Ky.

OWN FOUR 160-acre tracts, alternate sections, central Oklahoma. Made investment after careful study. Activity in counties on three sides. Will sell only in forties, retaining half entire. Several tests starting. Offered at $4 per acre, immediate sale. Address John J. Dillon, P. O. Box 194, Denver, Colo.

30,000 ACRES leases, blocked 95 per cent solid in central part of Monroe County, Alabama. Geological report favorable for presence of gas and petroleum. Would be glad to hear from anyone interested in development of a wildcat proposition of this kind. G. L. Nettles, Tunnel Springs, Ala.

TEXAS OIL LEASES 10c an acre up to $10 an acre. Will sell tracts of 10 acres or more. Have 30,000 acres to choose from. All new five-year leases. Get full particulars. Gulf Realty Co., 1093 Bedell Bldg., San Antonio, Tex.

I HAVE wildcat acreage for sale in vicinity of well located by the same geologist who discovered the Sayre oil field and recommended by him to be as safe an investment as the Sayre Field. I can sell for $2 per acre and up. Dr. W. R. German, Canadian, Tex.

$1.00 PER ACRE for 1,000 or 5,000 acres in the Panhandle of Texas on surveyed structure. Well drilling to prove this territory. No rental due till 1926. A snap for someone. If interested, write and will forward printed geologist's report and map. 300 Alworth Bldg., Duluth, Minn.

FREE ON REQUEST—Map of Allen County, Kentucky, showing pools. Greatest shallow oil field in the world. Production on pipe line and leases with wells equipped and unequipped, near pipe line. Splendid opportunity for oil companies or syndicating. Brokers and promoters protected. Lock Box 4, Scottsville, Ky.

I HAVE 14,000-acre block to give for two test wells. I will furnish maps and report. J. H. Cumley, care The Oil and Gas Journal, Tulsa, Okla.

OWN SIXTY and forty-acre tracts, Archer County, Texas, southeast Archer City. Will sell half $6 per acre, immediate sale. Owner, P. O. Box 194, Denver, Colo.

FOR SALE OR LEASE, several hundred acres near Powell discovery well, Corsicana Field; perfect title; deal with owner. Investments, 613 Mercantile Bank Bldg., Dallas, Tex.

LEASES, ROYALTIES — 90 acres leases, one mile, 200 acres royalties half mile from Southwestern Petroleum Co.'s 8,000-acre test well just recently spudded in. For particulars write Ed S. Adams, Garrison, Tex.

REAGAN COUNTY LEASES—Close in, choicest in the field; from 5 to 10,000 acres. Price $2 to $25 per acre; advancing daily. Better act NOW. Here since 1906. Riser Realty Co., Big Lake, Tex.

10c AN ACRE and up for leases in Guadalupe, Blanco, Medina, Zapata and many other counties. Will sell 10 acres or more. All new five year leases. Get particulars. Gulf Realty Co., 1014 Bedell Bldg., San Antonio, Tex.

185-ACRE FEE for sale on probable salt dome, 18 miles southeast of Houston, Tex.; 1 mile east of Ellington Aviation Field. Wildcat shut down on adjoining tract; valuable agriculture; guaranteed title; sacrifice price. Owner, W. D. Port, 10024 Burton Ave., Cleveland, Ohio.

LEASES—PRODUCTION

POTTAWATOMIE COUNTY leases and royalties. B. H. Rowlett, Tecumseh, Okla.

160 ACRES, Panhandle, Texas, near Oklahoma border activity. Sell two forties, $3 per acre, if quick sale. Owner, P. O. Box 194, Denver, Colo.

WEWOKA, OKLAHOMA'S newest oil field, leases and royalties in Seminole and Pottawatomie Counties. Royalty in 33-8-8. W. R. Turner, 2123 Warren Ave., Chicago, Ill.

Answer the 1924 Red Cross Roll Call.

FOR OIL and Gas Leases on school land in the famous San Juan Basin, New Mexico, priced right, address P. O. Box 366, Farmington, N. M.

Answer the 1924 Red Cross Roll Call.

6,000 ACRES for drilling contract; extreme south end Lonoke County, Arkansas. R. H. Hardin, England, Ark.

82½ ACRES, Baylor County, Texas, adjoins large acreage held by The Texas Co. Will sell half $3 per acre if taken soon. Owner, P. O. Box 194, Denver, Colo.

ANSWER the biggest classified advertisement ever written—

"Buy Christmas Seals"

In so doing you will be helping a most worthy cause and spreading happiness.

FOR SALE—Leases and royalties in Arkansas oil belt, Ouachita, Columbia and Lafayette Counties. Address Box 562, Magnolia, Ark.

PRODUCERS, Refiners and others interested can secure protection acreage on one of the best anticlines in Montana. Recommended by U. S. G. S. and leading private geologists. Test well now drilling. Walter F. Brittan, Poplar, Mont.

WILL TRADE oil leases near drilling well in Childress County, Texas, on structure for similar leases or royalties near other drilling wildcat wells. Our well is fully financed and contracted to reliable people. No rentals till 1926. 300 Alworth Bldg., Duluth, Minn.

FOR SALE—75 acres of land in 15 and 16-12-21, Sequoyah land, about 5 miles south of Empire drilling well. Good land, and a bargain at $10 an acre. J. L. Haner, Muskogee, Okla.

40-ACRE farm, good house, barn, well, orchard, part bottom, about 20 acres cultivation, close to school, church and small town; horse, pigs and chickens. First with $650 gets farm and all. Bee Vanemburg, Moorefield, Ark.

PRODUCTION for sale. Will sell producing oil property, located in Roane County, West Virginia, with one gas well making 2,500,000 two oil wells making 10 bbls. of 49 gravity oil per day, with complete outfit, consisting of four Standard rigs, casing, pipe lines and two Reed engines, with 1,000 bbls. of oil in storage, on lease of 1,400 acres, all on good structure. Here is a bargain; all statements guaranteed. C. Lewis Wilson, P. O. Box 82, Parkersburg, W. Va.

WILL GIVE a 7,000-acre block in Taylor County that joins three gas wells measuring 150,000 feet each for a drilling contract. This acreage is within 40 yards of these wells, also near a small 600-foot oil well. S. S. Gaddie, Bengal, Taylor County, Kentucky.

TAYLOR COUNTY booms in her natural gas. I will furnish the leases, ground and three good gas wells in Taylor County, Kentucky, to a company or an individual who will install a carbon black plant and go partners with me, or I will furnish the gas very cheap to a manufacturing company. R. T. Gaddie, Bengal, Taylor County, Kentucky.

LEASES—PRODUCTION

SHEFFIELD TERRACE (Marathon Fold) and Balcones Fault leases. We have them for 10c an acre up in tracts of 10 acres or more. All new five-year leases. 30,000 acres to choose from. Get particulars. Gulf Realty Co., 1017 Bedell Bldg., San Antonio, Tex.

FOR SALE—EQUIPMENT

FOR SALE—Used casing and line pipe in A-1 condition, all sizes. Write or wire for prices. Cisco Pipe & Supply Co., Cisco, Tex.

FOR SALE — A 28 Star, fully equipped, near Sedan, Kans. Will sell cheap to close a copartnership. W. G. Kountz, Webb City, Mo.

HAVE COMPLETE string casing 15½ to 6-inch would furnish on wildcat. E. E. Aldridge, 1002 Burkburnett Bldg., Fort Worth, Tex.

DON'T BUY a light plant until you see Farmelectric, the Ford Parts Plant, and get prices and terms. Chas. S. Brown, state distributor, 21 N. Dewey, Oklahoma City, Okla.

THE WESTERMAN STUFFING Box does not pack with rubber rings and will give long, continuous service without attention. If your supply dealer hasn't them, send your order direct to The Dragon Mfg. Co., Marietta, Ohio.

FOR SALE—23 Star Drilling Machine in good condition and a complete set of tools; will sell very reasonable for cash. J. H. Brocksmith, 1856 Menard St., St. Louis, Mo.

SECOND-HAND PIPE—All kinds of used pipe. At present we have 10 miles of 8-inch oil line pipe. For particulars write Ohio Iron & Supply Co., 909 St. Johns Ave., Lima, Ohio.

FOR SALE, CHEAP — Standard rig, complete, Oil Well Supply Co. outfit. Address John Ewen, Alanreed, Tex.

FOR SALE—All sizes used casing and line pipe. Wire or write for prices. Breckenridge Salvage & Supply Co., Breckenridge, Tex.

FOR SALE—One string of standard tools, from 18-inch to 5⅞; 50 h. p. boiler; 12x12 Ajax engine, used on 3 wells. Also one No. 28 Star machine, with calf wheel; 25 h. p. Mounted Oil Field Boiler; tools from 10-inch to 6⅝, with machine. For further information write H. L. DeWoody, 817 Hargrove St., Ardmore, Okla. Telephone 1848. Will sell at a bargain.

FOR SALE

3—300 h. p. gas producers
3—350 h. p. gas engines
1—18x8½x14 belt driven compressor
Complete electric plants both D. C. and A. C.
All kinds of equipment bought and sold.
R. W. Russell, St. Mary's, W. Va.

FOR SALE — Complete artificial gas plant. Four-foot water gas set, capacity eight to ten thousand cubic feet per hour. For particulars write The Upham Gas Co. of Texas, Mineral Wells, Tex.

PIPE BARGAINS—100,000 feet 2½-in. pipe, good threads and couplings, 9c f.o.b. Houston; 500,000 ft. other sizes at proportionate prices. Texas Supply Co., 2016 Loraine St., Houston, Tex.

OIL REFINERY for sale. Address J. I. Jones, Trustee in Bankruptcy, Box 1005, Great Falls, Mont.

THREE 100 h. p. Rathburn-Jones natural or producer gas engines, one 100-h. p. Bruce natural gas engine, one Forman-Bassett gas producer. Also direct current generators for above engines. All in A-1 condition, and will be sold cheap. Banner Machine Co., Columbiana, Ohio.

USED GAS ENGINES—20, 50, 110 and 150 h. p. Bessemers; 35 h. p. Chicago Pneumatic; 65, 100 and 125 h. p. Millers; 401-ft. Chicago Gas-Driven Air Compressor, 100-lb. working pressure. Ask for our used machinery stock sheet. Landreth Machinery Co., Joplin, Mo.

FOR SALE—EQUIPMENT

FOR SALE — Turnbuckle rig, three boilers, engines, drilling and fishing tools. Will sell all or part, reasonable. Address Lock Box 18, Robinson, Ill.

FOR SALE—Gas, oil and steam engines, generators, motors, compressors and all kinds of second-hand equipment. Ask for our complete list. Acme Foundry & Machine Co., Coffeyville, Kans.

FOR SALE—A lot of fine, heavy, 13, 12, 10, 8¼ and 6⅝-inch pipe in Garvin County, Oklahoma, at a great bargain. U. M. Shappell, Lima, Ohio.

TANK BOLTS
SAME-DAY SHIPMENT
5/16x¾-inch, ⅜x¾-inch, ⅜x1-inch, ⅜x1¼-inch, ½x1-inch.
Write or wire for quotation.
SHEETS—All gauges and sizes; galvanized, blue-enamel. Also corrugated and composition roofing. Plates to ¼ inch.
STEEL MFG. & WAREHOUSE CO.
1447 Genesee St. Kansas City, Mo.

Answer the 1924 Red Cross Roll Call.

USED MACHINERY of all kinds; boilers, steam and gas engines, compressors, boiler tubes, pipe and fittings. Ask for stock sheet. Landreth Machinery Co., Joplin, Mo.

ANSWER the biggest classified advertisement ever written—

"Buy Christmas Seals"

In so doing you will be helping a most worthy cause and spreading happiness.

FOR SALE—De Laval separator, good condition, less than half price. Bryte-Nelson Refining Co., 1171 Arcade, St. Louis, Mo.

INCORPORATIONS

DELAWARE incorporator. Charters; fees small; forms. Chas. G. Guyer, 901 Orange St., Wilmington, Del.

WANTED

WANTED—Acreage on good geology for drilling contract. Address Box 901, care The Oil and Gas Journal, Tulsa, Okla.

PRODUCING Royalties Wanted. Send full particulars and lowest cash price. H. M. Haverbeck, 50 Broad St., New York.

STOREHOUSE OF INFORMATION

The Oil and Gas Journal contains statistics and unlimited information that is most valuable to the oil and gas man. Calls for back numbers are so numerous we are unable at all times to supply the demand—in fact, we can furnish very few back numbers. The issues missing from our files may be the ones you want. To make it possible for you, at all times, to refer to special articles or other information you desire, we have secured binders specially designed and durable and attractive in appearance that hold 26 numbers, or six months' issues. They are for sale at actual cost to us.

Price $2.25, Postpaid

THE
PETROLEUM PUBLISHING
COMPANY
114-116 West Second Street
Tulsa, Okla.

25 CENTS per line first insertion; 15c per line each additional insertion. Cash in advance.

CLASSIFIED WANTS

COPY must be in our office Friday prior to date of issue. Average 6 words to the line. Cash in advance

WANTED

F. W. MERRICK, Ardmore, Okla., desires the address of one Mr. Campbell, who worked for the Paraffine Oil Co. at Wirt, Okla., in the year 1914. Matter of interest to Mr. Campbell. I think Mr. Campbell went to Walters, Okla., after leaving the Healdton Field.

WANTED — Several experienced oil well drillers and helpers. Best of wages to the right men. Michigan Oil Development Co., Aarons Bldg., Manistee, Mich.

WANTED — Brokers or Promoters: Awarded 6,000 acres by Commissioner New Mexico; largest structure in America; Government shows seepage; drilling well excellent showing; competition keen. Syndicate comprises 4,800 acres at $15 acre. This purchases 16 units of 24-unit company. Well site 1,000; excellent geology; structure 2,000 feet higher than Amarillo; good commission. K. O. D. L. Co., Box 824, Wichita, Kans.

WANTED—110 or 125 h. p. Bessemer gas engine. Address Box A-5, care The Oil and Gas Journal, Tulsa, Okla.

WANTED—Two or three good blocks of acreage in East Texas for drilling contracts. Submit full details and best proposition in first letter. If not interested all data will be returned. Box 804, El Dorado, Ark.

BUSINESS OPPORTUNITY

SALES MANAGER will put $10,000 and services into business or venture that promises a worth-while future. P. O. Box 457, Chicago.

To circularize the readers of The Oil and Gas Journal, once, it would cost more than $500. For a small sum you can reach these readers and place your proposition before them.

The classified rates are attractive. It costs but 25 cents the line for the first insertion and 15 cents the line for each additional insertion. Six words usually make a line. Cash with the order.

This useful table will help you to figure the cost of Classified Advertising in The Oil and Gas Journal. Keep it for reference:

	1 time	2 times	3 times	1 month
3 lines	$ .75	$1.20	$1.65	$2.10
4 lines	1.00	1.60	2.20	2.80
5 lines	1.25	2.00	2.75	3.50
6 lines	1.50	2.40	3.30	4.20
7 lines	1.75	2.80	3.85	4.90
8 lines	2.00	3.20	4.40	5.60
9 lines	2.25	3.60	4.95	6.30
10 lines	2.50	4.00	5.50	7.00

ANSWER the biggest classified advertisement ever written—

"Buy Christmas Seals"

In so doing you will be helping a most worthy cause and spreading happiness.

FOR SALE—2,000 shares of the Blue Bird Oil Corp. of Houston, Tex., at 3c per share, par value 10c; also $500 production bond that goes with it, for quick delivery. Address J. H. F. Laflamme, 401 South A St., Arkansas City, Kans.

WILL FURNISH a 320-acre block in Pushmataha County for drilling contract. Wm. J. Riley, Atlantic City, N. J.

WANTED—An issue of securities to float in the East by reliable concern on commission. Address Brokers, U. S. Realty Bldg., Suite 512, New York.

BUSINESS OPPORTUNITY — Can get proven acreage payable out of half of first oil produced. Let us secure this acreage and drill well for you. This acreage available short time only. Act quick. Johnston Drilling Co., El Dorado, Ark.

EASTERN CAPITAL is interested in refining proposition. Give full particulars in first letter. Address Box 808, care The Oil and Gas Journal, Tulsa, Okla.

BUSINESS OPPORTUNITY

WILL MAKE up selected drilling blocks, Hempstead, Howard, Sevier Counties, Arkansas, for small cost. F. E. Waldrop, Nashville, Ark.

BROKERS, NOTICE!

Brokers and others who desire to make reliable connection in the Oklahoma oil fields, write me. Best bank references; 10 years' experience; have helped many others make money; can furnish oil production, leases and royalties in good fields. If you desire to buy or handle oil properties, write me. John S. Graham, Oil Producer, Chickasha, Okla.

COMMON LAW COMPANIES — Organize under Declaration of Trust; many advantages; legal everywhere; managed by trustees; limited liability. No State organization fees, reports or franchise tax. Meet or do business anywhere. Better than a corporation or partnership. Booklet free. Modern Organization Co., 304 South Broadway, Los Angeles, Calif.

CAPITAL RAISING — Compaigns planned, written, printed — everything complete ready to mail to investors. Twenty years' experience handling investment advertising. Clients all over America. Big, illustrated book, "How to Raise Capital" free if you submit detailed outline of your proposition. Ernest F. Gardner, L-511 Ridge Arcade, Kansas City, Mo.

Christmas is coming. You will want to give a present to your friend; a gift that will help him in his desire for advancement; a gift worthy of his intelligence.

The Oil and Gas Journal will make an excellent gift. It will help your friend and throughout the year it will be a reminder of your friendship.

Send your friend's name and complete address with your remittance to us and The Oil and Gas Journal will be mailed to him every week.

We will advise him of your kindness.

A BEAUTIFUL summer resort or all-year-round home; splendid new 6-room bungalow in picturesque Ozark setting, among grand oaks and large, clear springs; on a 147-acre paying farm, five fine springs; large fish pond site and many other attractions; on main highway. Robinson Realty Co., 307 Frisco Bldg., Joplin, Mo.

INTERNATIONAL financing; want right now high-grade bond or stock issue. Box 471, Oklahoma City, Okla.

AN OPPORTUNITY

A group of oil men and capitalists are building an oil refinery on deep waterway at Montreal, Canada, the company having many subsidiary interests and connections in kindred lines providing for the establishment of large and extended operations and for successful and profitable business.

The location provides for deep water tanker supplies of crude oil from all available fields and for most direct access to both domestic and foreign markets for the manufactured products of the refinery.

The group interested is seeking an experienced official and operating staff to join with them in the enterprise. It is desired that such positions be manned by men who will take some financial interest in the company and give assurances of the requisite experience, ability and responsibility. Communications treated confidentially. Address Box 271, Station H, Montreal, Canada.

COMPOUNDER and lubricating engineer desires to interest reliable parties in a compounding department for lubricants and New Colloidal greases. If necessary will furnish part of money for equipment, providing parties can show sales capacity for these products. Address Box A-2, care The Oil and Gas Journal, Tulsa, Okla.

BUSINESS OPPORTUNITY

WILL INVEST $10,000 in oil proposition of merit. Write full particulars care Box A-4, The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED

WANTED — Position by experienced welder and mechanic. Have had four years' experience in pipe and refinery work. Best of reference and will go anywhere. Address Box 2, care The Oil and Gas Journal, Tulsa, Okla.

SUPERINTENDENT of tools and production and expert fisherman, desires connection with reliable oil company; years of practical experience. Can go anywhere. Box 110, The Oil and Gas Journal, Tulsa, Okla.

Answer the 1924 Red Cross Roll Call.

POSITION WANTED—Should you be desirous of engaging a man to supervise the operation or construction of your plant, and one who can manage an organization in a high-powered manner and get results, then I am one who can serve your purpose. Have 14 years' experience. Now supervising a plant. For personal reasons am ready for new connections. Will only consider an offer of real merits. Can furnish best of reference. If convenient, can arrange interview. Reply Box 1, care The Oil and Gas Journal, Tulsa, Okla.

FIELD MANAGER, who has had several years' experience in charge of production and drilling for large companies in the Mid-Continent and Wyoming fields, is open for a position of responsibility. Am a graduate engineer and possess references of the highest character. My experience, which has been very thorough and extensive as an executive and field manager, qualifies me to handle the operations of a private individual or the work of district superintendent. If you are in need of a man who has developed character and initiative, please address Box 803, care The Oil and Gas Journal, Tulsa, Okla.

ANSWER the biggest classified advertisement ever written—

"Buy Christmas Seals"

In so doing you will be helping a most worthy cause and spreading happiness.

The Journal has a wide circulation, going to all the oil fields, refineries, pipe line stations, gasoline plants, supply houses and business offices. It thoroughly covers the industry.

REFINERY Superintendent wishes position; 20 years' experience; have built two refineries. Address R. C., care The Oil and Gas Journal, Tulsa, Okla.

HIGH-CLASS man, experienced officer and department head, qualified in all lines of production office work; expert accountant and organizer; pleasing personality, with ability to meet the demands of the position, familiar with all Mid-Continent fields, wishes to make new connection by January 1. Address Box 902, The Oil and Gas Journal, Tulsa, Okla.

CARBON BLACK superintendent desires connection with responsible party West. Experienced in construction plants and producing different grades of black. At present in charge of operation East. High-class references. Address Box A-3, care The Oil and Gas Journal, Tulsa, Okla.

OIL SALESMAN and sales manager of wide experience, now connected with one of the large companies, desires to make change. Exceptional ability in marketing of oils of all kinds. Highest reference can be given. Address Box A-1, care The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED

OKLAHOMA C. P. A. desires connection with oil corporation as manager, comptroller or auditor by first of year. Several years' experience in oil business. Capable of assuming large responsibility. Address Bennett, 521 Wichita, Shreveport, La.

FOR SALE—PETS

FOR SALE — Well-broke pedigreed pointer and setter bitch do it all, $125 each. Close bred Ch. Manitoba Rags; dog pups, 7 months, just started, all papers, $35. W. L. Kilpatrick, Bartlett, Tenn.

LETTERHEADS—PRINTING

OIL FIELD LEGAL BLANKS—Leases, assignments, releases, township plats, gauge books, run tickets, time books, well records, etc. Request on your letterhead gets free catalogue. Olds Press, 215 East Third St., Tulsa, Okla.

TOO LATE TO CLASSIFY

FOR SALE—Three 110-H. P. Miller Gas Engines, direct connected to Watts' two-stage compressors; low side 11x20; high side 6½x20.

TWO 85-H. P. Miller Gas Engines; direct connected to Watts' twin-cylinder vacuum pump; 18-inch bore, 20-inch stroke.

All of above located 2½ miles north of Elgin, Kans. Address Roth Gasoline Corp., Independence, Kans.

PURE WHITE Collie pups. An ideal Christmas gift. Papers with each pup. Address Louise Spohrer, Box 255, Nevada, Mo.

LEASES FREE for drilling offsets. Allen and Warren Counties, Kentucky; 300 to 600 feet deep. Box 489, Bowling Green, Ky.

OIL OPERATORS—Montgomery County, Mississippi, world's next big oil field; 3,000 acres leases for well. W. C. Brooks, 282 S. Front St., Memphis, Tenn.

Mae L. Russell, 1930 Lemon Street, South Pasadena, Cal., desires the address of her brother, William Lee Russell. Mr. Russell has worked in the Texas, Oklahoma, and Old Mexico oil fields. He was last heard from in Ranger, Texas, January 28, 1920. It is very necessary that Miss Russell get in touch with her brother. Anyone knowing the whereabouts of Mr. Russell will confer a favor by notifying Miss Russell.

Production
Drilling Blocks
Leases and Royalties
Geological Value Given Preference
J. M. Allen
902 Petroleum Bldg. Tulsa, Okla.

MEXICAN OCTOBER OUTPUT

The October production of petroleum in Mexico is announced by the Department of Commerce as 11,851,000 barrels, or 1,500,000 less than in September. The September export figures were approximately 1,750,000 below the August figures. The government has announced that the exportation for the first nine months of this year is 42,000,000 barrels less than for the first nine months of 1922.

OIL AND GAS LEASES

Oil and gas applications, under the leasing act, on hand at the Interior Department October 31 totaled 3,343, against 3,898 cases October 1. During the month 294 new applications for permits were received and 1,530 old cases which required further action before being finally disposed of.

Depend on Deming-

Deming Pumps are built for downright strength and ruggedness through and through. There is no complicated design—no frills. Bolt heads are placed where you can get at them and are made generously big for sure grip of wrench jaws. Valve chambers are roomy and valve areas wide to reduce friction and eliminate clogging. All valves are easily accessible through ample hand holes without disturbing pipe connections. Deming Pumps are built for hard service—and lots of it!

Complete Deming Pump Book Sent on Request

THE DEMING COMPANY
Est. 1880
Salem, Ohio
"Hand and Power" Pumps for all uses"

Western Oil Field Distributors:
Atlas Supply Company
Muskogee and branches

Deming PUMPS

IMPROVEMENT IS SHOWN BY OCTOBER STATISTICS

(Continued from Page 98)

tank farm stocks by reducing their own stocks. In September, the refiners reduced their stocks 3,339,000 bbls. despite a large surplus of crude over consumption requirements. It will be noted that in October refinery stocks were decreased 367,522 bbls., although plenty of crude was available for purchase in practically all fields.

Forced to store this excess crude the legical development was a reduction in the price schedules as posted by the major purchasing companies. In view of these large increases in storage it is sometimes asked in what way is the situation improved. The answer lies both in the production and consumption data. In regard to the production the October report shows that the production tendency was down rather than up, as was not the case for the six months previous to September 1. Close students of conditions affecting crude markets date an improved situation from the time it is definitely apparent that there is no new production to flood the market. It may require weeks and usually does, especially when it occurs during the fall or early winter, for this change to be reflected in crude prices.

In October the only production feature that was uncertain was the Powell Field in Texas and a study of data covering the entire year shows that field was of minor importance in disturbing a market situation when compared to the California production in the summer. The Powell Field prevented a rapid recovery in oil markets but at the same time was not a serious disturbing factor. Since October the Powell situation has changed so that at the present time probably a half dozen acreas are of more potential importance in gauging future conditions. When the Powell decrease and other known reductions in productions are considered in the light of the October consumption it is certain that the relationship between crude supply and demand is increasingly encouraging to those desiring high crude prices.

Nearing Normal

Insofar as refined products are concerned, based on the October report, it may now be said that the situation in regard to production and stocks is near normal. Kerosene, in fact, at the end of October was in a stronger position than at any time in the recent history of the industry. That this situation has continued to the present time is apparent in the strong kerosene market which has been reflected in higher prices during the past month. Stocks at the end of October were reduced to the point where the supply on hand did not represent much more than a month's consumption.

Fuel oil, which has had a surplus supply over demands since the first of June, also had a substantial decrease in stocks during October, due to a large increase in consumption which more than offset a slight increase in production. There are several indications that this situation in regard to supply and demand also continued up to the present time, for the fuel oil market, with the exception of a few refining areas, has shown general price improvement. A glance at the accompanying curve covering fuel oil consumption will show the large increase, especially since the first of September.

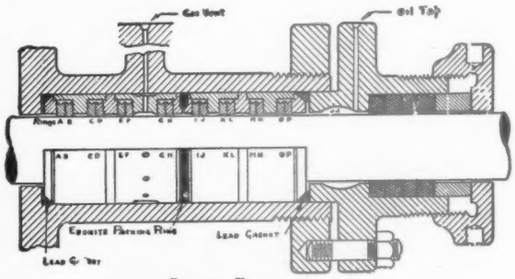
Seasonal Slump

The seasonal slump in gasoline consumption for October totaled 26,140,722 gallons under the total for September. The daily production was also slightly less, although the total for October, with its 31 days, was 9,187,087 gallons greater than the total for September. With a reduction of 25,822,149 gallons for the month gasoline stocks on November 1 totaled 946,872,683 gallons. This decrease in stock has been possibly due to the consumption which continues to exceed the expectation of even the most optimistic predictions. The consumption

FRANCE METALLIC PACKING

FOR ANY PRESSURE

Air, Gas, Steam or Ammonia



FRANCE AMMONIA TYPE PACKING

$25.00 Per Inch Dia. of Rod

Adopted as standard by Ingersoll-Rand and many others. It is guaranteed to give satisfaction. We have packings that have given fifteen years' service.

Send for Catalog and List of Users

FRANCE PACKING COMPANY
6612-18 Tacony St., Philadelphia, Pa.

Bracnhes: Western Supply Co., P. O. Box 1824, Tulsa, Okla.
A. C. Stucky, 222 Warwick Blvd., San Antonio, Texas

"Be Square Products"

Pioneers in the manufacture of High Grade Uniform Quality Western Cylinder Stocks known all over the world as

BIGHEART CYLINDER STOCKS

Bright Stock

Filtered Stock

Steam Refined Stock

Red and Pale Oils

Write, telephone or telegraph for quotations

Telephone Harrison 1586

Barnsdall Refining Company
Successors to Bigheart Producing and Refining Co.
910 S. Michigan Ave. CHICAGO, ILL.

New York Kansas City
Los Angeles Tulsa
Refinery: Barnsdall, Ok.

A Guaranteed Product

STEELEX Balls and Seats and BRONZEX Balls and Seats are ground to fit—guaranteed tight.

Each Ball and Seat is ground together individually and they are kept in sets through the different operations in manufacture.

You can always depend on STEELEX (in the red box) and BRONZEX (in the yellow box.) They are always absolutely uniform in quality and accurately machined.

You must appreciate how much this means toward reducing your operating costs.

If you forget the name remember the package

THE CHARLES N. HOUGH MANUFACTURING CO.
"Where the Reliable Oil Well Supplies Come From"
Franklin, Penna.
PUMPING EQUIPMENT

Deep Well Drilling
By Walter H. Jeffery

A practical handbook on well drilling by cable and rotary systems, including geology, building derricks, drilling, underreaming, fishing, casing methods, cementing casing, shooting, finishing wells, cost of drilling, strength of materials, and State laws.

531 Pages—240 Illustrations

Price, postpaid, $5.00

W. H. JEFFERY COMPANY
614 Second Nat'l. Bank Bldg.
TOLEDO, OHIO

APOLLO MAGNETO
Mid-Continent Distributors
Power Engineering & Ignition Co., Inc.
811 S. Main St. Tulsa, Okla.

for October was 32 per cent greater than the same month of last year.

Considering this large increase in consumption, it is apparent that gasoline stocks can no longer be considered excessive, although, based on gallonage, the total November 1 was approximately 31 per cent greater than a year ago. The market situation as to price has shown only slight improvement and that did not occur until the latter part of November. Aided by the heavy gasoline consumption and faced with low market prices, refiners have been practically forced to adjust their operations so that they lowered their stocks from the summer peak. Past experience has shown, however, that the basic factor in refined markets is the crude situation and following an overproduction period in gasoline no material improvement is to be expected until the crude situation rights itself.

OIL INDUSTRY NEEDS BETTER ADVERTISING

By W. M. Horner

President, Mahr Manufacturing Co. Presented at Group Session on Utilization of Petroleum, December 12. Fourth Annual Meeting, American Petroleum Institute

Institutional, educational advertising is—publishing nonpartisan, useful information about a product. It is not a selling campaign only in that such advertising leads to increased sales because of the better understanding created. It is the purpose to substantiate the logic of institutional, educational advertising as practical and efficacious and to show why during the last decade while the subject has been a live issue, more campaigns have not succeeded. It is also the purpose to point out the advantages and methods of common action in treating with the public about oil as fuel.

The logic of institutional, educational advertising to be proved must have for its foundation the basic idea of comity of nations and peoples, and the incontrovertible fact that there are between all such, constructive and corrective measures politically and commercially which can, should, and in many instances must be solved by unified action.

The expenditure of $250,000 per year for two or not to exceed three years would make hundreds of millions for the oil industry and for equipment and burner manufacturers, and result in monumental service to plant owners and householders.

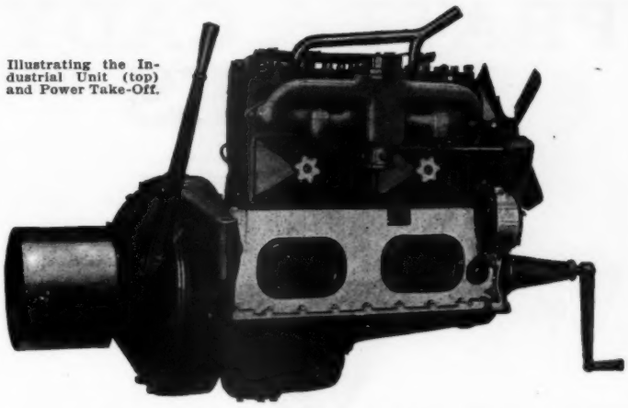
The fact that this evolutionary period is in full swing and so little done by the oil industry to meet the requirements and look after their own fences is not in keeping with the usual sagacity and enterprise for which this fraternity is noted. It is evident, that there has been lack of crystallizing on some means of procedure. It cannot be that there is ignorance of the real situation as demanding some kind of concerted action from the oil industry and from those who make a scientific product for burning oil as fuel.

Careful investigation shows that the people, especially big business men, are gun shy in fitting their plants for oil as fuel because of uncertainty in constancy of supply and stability of price. Surely the larger units in the oil industry can get closer together without transgressing the law and give users of oil assurance that prices will be kept fair to buyer and seller and all due zeal of the industry used to supply demands.

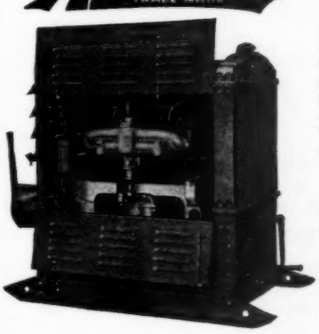
There is no reason why there cannot be stipulation on these matters and others for common treatment by a well selected committee chosen from the oil industry, plant equipment manufacturers and burner manufacturers.

There is ample scope for ingenuity and driving power of men engaged in the oil business and in equipment business to improve and market more expertly their own individual products, leaving common problems for economical and effective handling by the committee created.

Illustrating the Industrial Unit (top) and Power Take-Off.



Waukesha
TRADE MARK



Pumps and drilling machinery, operated by the Waukesha Industrial Unit, continuously deliver their full capacity. Waukesha, built for work, enables you to maintain this new efficiency and at a consistently low operating cost.

Its power is capable and dependable at all times—under ordinary conditions, in emergencies. Its long-period, economical performance is assured by a manufacturing skill, seasoned through long years' experience building America's finest "heavy duty" motors.

Write today for complete details.

THE WAUKESHA MOTOR COMPANY
Waukesha, Wisconsin
The World's Famous Builders of Bus, Truck, Tractor and Industrial Motors Exclusively

SALES OFFICES
1824-1825 Aeolian Bldg., 33 W. 42nd St., New York. Telephone: Longacre 5784
503-505 Capitol Theater Bldg., Madison Ave. Side, Detroit. Telephone: Cadillac 4482

Compact—Concise—Comprehensive Catalog Available.

Tycos Temperature Instruments

The application of Tycos Recording Thermometer in the oil industry is of vital importance at the following points:
Pump Stations
Steam Power Plants
Feed Water
Condensers
Economizers
Superheated Steam
Flue Gas
Blow-Offs
Combustion Chamber
Main Steam Lines
Distillation Applications
Coal, Oil and Gas-Fired Stills and Vapor Lines
Tar Stills and Vapor Lines
Steam Stills and Vapor Lines
Pressure Stills
Condensate Lines and Tail House Run-Down Tanks
Filter Plant
Heating Oil from Tanks into Filter
Hot Filter Room
Wax Plant
Refrigeration
(a) Ammonia Compressors
(b) Brine Lines
(c) Ammonia-Condenser Lines
(d) Chilling Coils in Oil Line and Brine Line
Press Room
Oil Heaters to Wax Sweating Room
Wax Test

Taylor Instrument Companies
Rochester, N.Y., U.S.A.
Theres a Tycos and Taylor temperature instrument for every purpose

Write for Oil Catalog Part 1700

PRATT & CADY VALVES

Built for all water, steam and oil services where the temperatures do not exceed 500°F.

Their rugged design and renewable parts assure long and reliable service.

Specify "P. & C." valves.

Reading Steel Casting Co., Inc.
Pratt & Cady Division
An Associate Company of the American Chain Company, Incorporated
General Sales Office: Bridgeport, Conn.

Boston, Charlotte, Chicago, Cleveland, Detroit, Hartford, Houston, St. Paul, New York, Philadelphia, Pittsburgh, San Francisco, Rochester

Stocked by: Norvell-Wilder Hardware Company, Beaumont, Houston, Mildred and Shreveport
Grinnell Co. of the Pacific, Los Angeles, Cal.

Oil Field Service

THIS service consists of drilling and equipping wells and leases. Righting bad holes and fishing for operators and drilling contractors. Developing and managing oil and gas properties. Determining proper casing points and weights of casing to use. Removing water from flooded wells. Renovating old wells.

Practical and confidential scouting. Geological and engineering reports. Surveying and mapping. Surface and sub-surface contouring. Appraising oil and kindred properties. Estimating the present worth and future prospects of stock, bond and note issues of oil and kindred companies.

Supplying commercial leases, also acreage for drilling, located on carefully selected structures in the proven, semi-proven and wildcat fields of Kentucky, Oklahoma and Texas.

T. S. McGRATH
Kenyon Bldg., Louisville, Kentucky

ROAD USES FOR PRODUCTS OFFER IMMENSE MARKET

(Continued from Page 21)

will eventually ruin the road oil industry. On the other hand an earnest effort to produce the best type of product for earth road treatment will meet with sympathetic response and cooperation from the consumer.

For the different types of asphalt pavements under varying climatic and traffic conditions asphalt cements of different degrees of hardness as determined by the penetration test are required. In past years highway engineers throughout the country have called for grades of asphalt for which they have set their own preferential limits of hardness or penetration with the result that an unnecessarily large number of narrowly limited overlapping grades have been demanded of the producer much to his embarrassment and annoyance.

During 1923 the United States Department of Commerce took cognizance of this situation and through its Division of Simplified Practice called a representative conference of consumers and producers of paving asphalt to consider the practicability of eliminating unnecessary grades. As a result it was found possible to simplify paving practice to the extent of reducing the number of grades of asphalt, so far as penetration limits are concerned, from 100 to 10, which was of very material assistance to the producer. This simplification becomes effective January 1, 1924.

Uses for Road Work

The following table will serve to classify the more important petroleum products which are used for all kinds of road and paving work.

1. Dust Preventives—Petroleum distillates, crude petroleum, skimmed or topped petroleum, cracked oil, pressure still tar, residual petroleum cold application, residual petroleum hot application.

2. Carpeting Mediums — Crude highly asphaltic petroleum, pressure still tar residuum, residual asphaltic petroleum hot application, cut-back asphalt cement, emulsified asphalt, very soft asphalt cement.

3. Asphalt Cements — Steam refined from asphaltic petroleum, steam and air refined from blends of asphaltic and semi-asphaltic petroleum, semi-solid residues from pressure still tar.

4. Joint Fillers—Steam refined asphalt cements, oxidized asphalt cements and residual petroleums, combinations of oxidized asphalt with mineral or fibrous material.

The impact of heavily loaded trucks coupled with the destructive effects of moisture and temperature changes will render more and more necessary the use of a resilient, waterproof, flexible type of either wearing course or pavement and in the long run these economic considerations will tend to popularize an all asphaltic type of pavement in which both the foundation and the wearing course use asphalt as a binder or at least the inclusion of an asphaltic wearing course on a Portland cement concrete foundation. It can readily be seen, however, that with the popular conception of Portland cement concrete as a durable material and the comparative popular ignorance of asphalt intelligent and sustained propaganda by the Portland cement industry will tend to hold and expand their market for cement in the paving industry to an extent not at all warranted by economic basic considerations.

The annual expenditure now for street and road improvement is well in excess of $1,000,000,000. It is quite evident, therefore, that the market possibilities for petroleum products for the roads and streets of the Nation are opening up in such manner as to indicate ample return for all the effort which may be put forth to develop this market.

TAX ON FUEL OIL AND GASOLINE

The British Columbia Provincial Government has introduced a proposal in the legislature to impose a tax of ½ cent a gallon on fuel oil, and of 3 cents a gallon on gasoline.

Expert Well Shooting

Our shooters are picked men — experts — and they know their work.

Also they are furnished with the best material with which to do it.

Phone or Write Our Stations as follows:

OKLAHOMA

Tulsa Office—Osage 6743.
Garage—Osage 1276.
D. A. Koone—Osage 6284.
W. H. Swartz—Osage 441.
J. A. Balcam—Cedar 2057.
Willis Hill—Osage 2289.
Bartlesville—Robt. Camblin, 21.
Drumright— Chas. Thiret, 424.
Cleveland—Fred Harris, 154.
Okmulgee—George Eba, 654.
Sapulpa—C. Eshelman, 145.
Duncan—Lee Vandell, 217.
Three Sands—W. F. Knode, Tel. 826-F23.

TEXAS

Breckenridge—Roy Richardson, 127.
Ranger—J. F. Tennyson, 126.
Gorman—P. W. Burdette, 150.
Mingus—James Dailey, 56.
Wichita Falls — Gary Young, 3684.

We also operate stations at Bowling Green, Scottsville and Owensboro, Ky.

The Eastern Torpedo of Ohio Co.
611 First National Bank Bldg.
Tulsa, Okla.

BAKER CASING SHOE CO.

Box 264-a Huntington Park Sta. LOS ANGELES, CALIF., and Box 239 — COALINGA, CALIF.

MANUFACTURERS AND DEALERS

Oil Well Specialties for Advanced Methods Practical and Dependable

BAKER

Anchor Wall Packers
Baker Casing Shoes
Bridge Builders
Cement Retainers
Cement Plugs
Clean-Out Bailers
Dump Bailers
Die Nipples | Water
Die Collars | Tight
Gas Traps
Hinged Spiders
Heaving Plugs
Pitman Ends
Plain Casing Shoes
Regular Hook Wall Packers
Release Hook Wall Packers
Rotary Bits Baker Type
Rotary Hole Guides
Rotary Shoes
Rotary Tool Joints
Rotary Wall Hooks
Split Shoe Guides

All Supply Houses or Direct

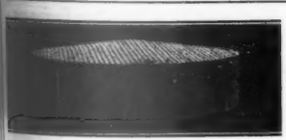
The men who read the Classified Wants Section of The Oil and Gas Journal control a large percentage of the buying power of the oil and gas industry. Let them see your advertisement in the Classified Wants Section.

STANDARD OIL
INDEPENDENT OIL
STOCKS
BOUGHT-SOLD-QUOTED
Francis, Bro. & Co.
—Established 1877—
MEMBERS
New York Stock Exchange
New York Curb Market
New York Cotton Exchange
N. Y. Coffee & Sugar Exchange
Chicago Stock Exchange
Chicago Board of Trade
St. Louis Stock Exchange
St. Louis Merchants Exchange
KENNEDY BUILDING
TULSA, OKLA.
INQUIRIES INVITED
Telephones
Cedar 3212 Cedar 3213

F. W. FREEBORN
ENGINEERING
CORPORATION
ENGINEERS, APPRAISERS,
CONSTRUCTORS, MANAGERS
For
Oil and Industrial Properties. Valuations for Income Tax, Re-organization, re-financing and Mergers.
General Offices: Mayo Bldg.
TULSA, OKLAHOMA

NEW OIL MAP
Nocona District
Covers an area about 15 miles square in north central Montague County, Texas. Shows land and lease owners, towns, railroads, highways, pipe lines and drainage and locations of all wells in and drilling. Scale 2,000 feet 1 inch. Size 42x42 inches. On cloth, $6; paper, $3.50.
HEYDRICK MAPPING CO.
Wichita Falls, Texas

Northern Oil Information Bureau
Shelby, Montana
Complete weekly drilling and operating report of Kevin-Sunburst field mailed to any address, $10 for four reports. Maps and logs for sale. Best of references.
We maintain a geological, land and field departments, all in expert hands


The Duplex Galvanized Iron Roof
Gas Tight-Water Proof
—saves the escaping gas
—reduces insurance rates
Workman Sheet Metal Roofing Co.
805 So. Denver, Tulsa, Okla.
Phone Cedar 4033-B

Answers Critics of Conservation Rules In North Louisiana

SHREVEPORT, La., Dec. 10.—Operators in the North Louisiana area have been addressed through a statement issued by H. W. Bell, supervisor of the minerals division, State Department of Conservation, in which he attempts to answer criticisms against the revised rules recently promulgated by that body.

For the reason that, as he states, "some of the proposals have been challenged as being conservation measures," an explanation is made for such changes. Objection having been made requiring monthly reports of carbon black and of marketable gasoline extracted from gas before being used for carbon (new Rule 48) on the grounds that the publication of such information might affect the market adversely, he replies: "That such reports would be held in strict confidence except as to field totals, and that the information is desired as a check on the amount of gas consumed by each carbon plant as an indication of the efficiency of that plant. This is entirely in line with the conservation work."

New Rule 50, for Ouachita, Morehouse, Union, Richland, Webster and Bossier Parishes, would prohibit the introduction of cement between casings to stop leakage and provides for the repair of the well if possible. He says: "This condition is due to defective shut-off, to defective casing, or to the fact that some other well is letting gas into the formation above the gas rock. The gas should be held with a bradenhead, and efforts made to eliminate the trouble."

He continues: "In order to learn the underground conditions it is necessary to know whether pressure exists between the casings and the effect of any operation that may be performed. Cementing between casings eliminates this source of information. The rule could hardly be interpreted, as some have, to mean that work would be required on a well when that well was not responsible for the condition. When in doubt, a test with a packer on tubing may be made for information, or possibly as the remedy."

Protection from water required by new Rule 52 in cases of temporary abandonment, he says: "Would be applied only when such work would be of benefit." This rule, he adds, will have the effect of simplifying procedure in case permanent abandonment is necessary. He says in regard to the revision of Rule 29 that it "does not change the rule as formerly written with respect to the authority of the commission to cancel permits. It relieves the operators, however, of getting permits renewed annually."

SELL TEXAS HOLDINGS

Stockholders of the Underwriters Producing & Refining Co. at a recent meeting at Titusville, acted favorably on a proposal to sell its holdings in Mitchell, County, Texas, to the California Co., a subsidiary of the Standard Oil Co. of California, for the sum of $650,000. The majority of the stock was represented. The Underwriters' holdings in Mitchell County, Texas, will be transferred, including a production of between 400 and 450 bbls. from seven wells. This company opened this field when its No. 1 Texas & Pacific came in 11 miles from Colorado, Texas.

In addition to the holdings involved, the Underwriters has production at Broken Arrow, Okla., and acreage near Duncan, Okla., on which a well is now drilling.

MUTUAL CONSOLIDATES OFFICES

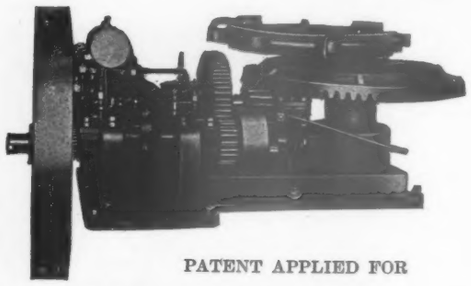
Directors of the Mutual Oil Co. have decided to consolidate its Denver and Kansas City offices, making executive headquarters in Denver. This change will bring together the productive, refining and marketing divisions into one general office at a point nearer the center of operations.

GURLEY
Engineering Instruments for the Oil Industry
Transits
Levels
Alidades
Plane Tables
Compasses
Rods
Steel Tapes
Ask for Special Bulletins

GURLEY NO. 27-A PRECISE TRANSIT
They Stand Up
Unusual accuracy and refinement of design and construction in an instrument is frequently associated with delicacy. But not when your transit is a Gurley. Every Gurley has the ruggedness built into it that enables it to stand severe service.
The Gurley Mining Transit Bulletin tells why. Ask for it.
W. & L. E. GURLEY
TROY, N. Y.
GURLEY
592-C

RED GIANT
Trade Mark Registered
VALVE CUPS
Why experiment?
We spent years experimenting for you before putting this Valve Cup on the market ten years ago. You can depend on the RED GIANT Cup giving the longest service. Made by a concern who have specialized in the manufacture of composition Valve Cups since 1875—the oldest Valve Cup company now doing business.
We know, just as the shrewd and careful operator knows, how important it is to have a Valve Cup that you can depend on giving you the longest wear on the average against the many annoying conditions which are experienced in more or less degree in every oil field.
Adopt the RED GIANT Valve Cup for your wells and reduce your maintenance as well as increase your production.
Ask your dealer or write us
PARKER CUP & SPECIALTY WORKS
Established 1875
Parkers Landing, Pa., U. S. A.
Sole manufacturers also of the Genuine Karns Bow Spring, Graphite Bow Spring, Black Giant, Karns Copper Expansive and Parker Canvas Cups.

50 MEN
To Learn Oil Geology and Engineering
New Class Now Organizing
Under the personal direction of a University Professor and Geologist of wide reputation. Graduates holding good positions with oil companies and doing work as independent geologists. A great opportunity to get into a profession of unlimited possibilities, where you can earn
$25 to $75 a Day
Day and night sessions. Personal and correspondence instruction. Actual field work and prospecting. Write today for Oil Bulletin and full information.
Department of Geology, Ransomerian School
1222-32 Oak St., Kansas City, Mo.



PATENT APPLIED FOR

"THE SPENCE"

A combined gas engine and single eccentric pumping power, with a 10½-H. P. gas engine, positive governor, gravity feed lubrication and Wico ignition for gas or gasoline equipment. This power has been pronounced by some of our largest producers as one of the best pumping units on the market for wells in territory of medium depth.

Manufactured and Sold by

H. M. SPENCE, Parkersburg, W. Va.

Stanley Belting

FOR PUMPING

No matter how hard the service Stanley Solid Woven Belting can be relied upon for pumping, powers and general oil production and refining work.

On display at Tulsa Exhibit. Stocked in Tulsa by T. R. Bartlett, P. O. Box 909, 'Phone Cedar 4588-R. Stocks in other supply centers also.

Stanley Belting Corp.
15-17 North Jefferson St.
CHICAGO

Remember, you have to buy only one Detroit Belt Lacing Machine in a lifetime. If anything goes wrong, it will be replaced free of charge.

Detroit is the only Staggered Grip Wire Hook Belt Lacing

DETROIT BELT LACER COMPANY
DETROIT, MICHIGAN, U. S. A.
BRANCH OFFICES IN LARGE CITIES

SAY CHARCOAL GAS RAN BERLIN AUTOBUS

Experiments are reported by the Chicago Tribune on the city busses of Berlin, when ordinary gasoline motors of a type used on heavy trucks were successfully operated on gas produced by burning charcoal.

Beside the chauffeur was placed a steel cylinder 2 feet in diameter and 4 feet high, almost filled with burning charcoal. The gas produced by combustion led through a feed pipe into the cylinders without a carburetor or other mixing valve. It produced full power over a long period.

One filling of the charcoal stove lasted seven hours on a motor rated at 40 horse power which was in continuous operation on the bus line carrying the heaviest traffic of the city. Engineers of the company said the motor ran more smoothly during cold weather with charcoal than with gasoline, and that the charcoal produced a more even flow of power, sufficient to handle varying loads over the seven hours of continuous running.

Besides being more economical than gasoline, which costs 75 cents a gallon, the charcoal produced less odor than the mixture of gasoline and heavier oil used on the bus lines. No smoke or poisonous fumes were thrown off. The device used operates a 40 horse power motor 16 hours, running continuously with a little more than 300 pounds of charcoal.

TEXAS LINES GATHER 98,522,225 BARRELS

AUSTIN, Tex., Dec. 10.—In spite of efforts of oil producers in Texas to curtail production, pipe line companies operating in Texas gathered 98,522,225 bbls. of crude oil during the past 10 months, January to October, inclusive, according to the oil and gas division of the Railroad Commission. There has been a gradual increase in production since the first of the year until October. January, 8,302,950; February, 6,946,079; March, 8,558,980; April, 8,244,459; May, 8,724,920; June, 8,318,852; July, 11,-314,610; August, 10,892,863; September, 11,838,163; October, 15,380,642 bbls.

SHOUP ON CALIFORNIA DECLINE

Paul Shoup, president of Pacific Oil Co., does not believe California's oil production after the middle of next year will be more than sufficient to care for western needs.

He says: "The past few months have witnessed a period of maximum production, and a maximum consumption to date, of light oil and its products. The period of maximum production is past. So far as known facts are a measure—and it must be kept in mind that the unexpected happens underground even more frequently than above ground—it seems likely that all oil passing through the Panama Canal from California after the middle of next year will mean drawing on California's storage to that extent; in other words, California's production the latter half of next year is not likely to more than care for the demands west of the Panama Canal."

NEW MEXICO 3,000-BBL. WELL

A message from Farmington, N. M., states that No. 5 well of the Midwest Refining Co. on the Hogback structure of the Navajo reservation is making 3,000 bbls. daily. A report of the completion estimated the production at 1,500 bbls. The oil is of 62.5 gravity, the same as in two other wells drilled on the Hogback. The gasoline content is said to be 85 per cent. The sand was entered at 760 feet and oil rose 500 feet in the hole through 10-inch casing. The flow was shut off and the well drilled 5 feet deeper. It is shut in pending erection of storage.

FREDERICK G. CLAPP
PETROLEUM ENGINEER
30 Church Street, New York City

W. L. GOMORY
Consulting Petroleum Technologist
Investigations, Reports, Estimates on Refineries, Special Processes, Management, Operation
Technical Advice in Patent Matters
REFINERY DESIGN
1927 Peoples Gas Bldg., Chicago, Ill.

HARRY F. WRIGHT
GEOLOGIST
Geological Examinations
Valuations for Tax and Financing
206 So. Cheyenne TULSA

E. W. SHAW
GEOLOGIST
302 Cosden Bldg., Tulsa, Okla.
170 Broadway, New York

JAMES O. LEWIS
PETROLEUM ENGINEER AND GEOLOGIST
724 Kennedy Bldg. Tulsa, Okla.

ROBERT W. CLARK
CONSULTING GEOLOGIST AND APPRAISER
Depletions and Reserves for Income Tax
217 Commerce Bldg.
OKMULGEE, OKLA.

DEWITT T. RING
PETROLEUM GEOLOGIST
EL DORADO, ARKANSAS

F. B. Porter, B.S., Ch. E., President
R. H. Fash, B. S., Vice President
THE FORT WORTH LABORATORIES
Field gas testing. Analyses of oil field brines, gas, minerals and oil
828½ Monroe St., Fort Worth, Texas

J. C. STULL
GEOLOGIST
Explorations, surveys, appraisals.
Diamond core drilling, for structure or wildcatting
130 Chapel St., Hot Springs, Ark.
Farmers State Bank, Granite, Okla.
Brady Hotel, Tulsa, Okla.

The Consolidated Petroleum Engineers
Geological Examinations, Appraisals, Surveying, Mapping, Management
Southwest Texas and Mexico
Jarvis Plaza LAREDO, TEX.

Quimby Screw Pumps
For oil, hot, cold, thin or thick at high or low pressure 2 to 4,000 G. P. M. High efficiency. Great durability. Valveless, pulseless, noiseless. High speed for motor or turbine. Built since 1894.
WILLIAM E. QUIMBY, Inc.
Newark, N. J.

DEAN E. WINCHESTER
GEOLOGIST
Petroleum and Oil Shale Examinations
607 E. & C. Bldg. DENVER, COLO.

L. G. Huntley Stirling Huntley
HUNTLEY & HUNTLEY
PETROLEUM GEOLOGISTS AND ENGINEERS
Frick Building PITTSBURGH, PA.

O. W. WELLS & CO.
Oil and Mining Properties. United States, Mexico, Central and South America. Specialists in Venezuelan oil properties. Expert advice rendered.
90 West Street, New York City
Cable address, "OILWELLS"

WESTERMAN BROS.
Manufacturers of
Oil and Gas Well Supplies
Write for New Catalogue
BREMEN, OHIO

THE JAS. I. TUCKER CO.
CONSULTING AND APPRAISAL ENGINEERS
Valuation of Oil and Gas Properties for Income Tax and Commercial Purposes
Tradesmens Bank Building
OKLAHOMA CITY, OKLA.

WYOMING MAP & BLUE PRINT CO.
GEOLOGISTS — OIL EXPERTS
Oil Field Maps, Blue Prints, Explorations, Reports
Box 325, CASPER, WYO.

BERNARD H. LASKY
PETROLEUM ENGINEER AND GEOLOGIST
Appraisals and Valuations for Financial Purposes
Geological Reports
Special Economic Investigations
208 Tuloma Bldg. TULSA, OKLA.

J. R. VILLARS
GEOLOGIST AND ENGINEER
17 Dunn Block
GREAT FALLS, MONT.

WRITE FOR OUR FREE BOOK ON
PATENTS
MUNN & CO.
361 Woolworth Building NEW YORK
Scientific American Building - WASHINGTON, D. C.
Tower Building - - - - CHICAGO, ILL.
Hobart Building - - - SAN FRANCISCO, CAL.

H. H. HOOD
PETROLEUM ENGINEER AND GEOLOGIST
Explorations, Surveys, Appraisers, Audits, Consultations, Management
1310 Chemical Bldg. St. Louis, Mo.

A. WILLCOCKS
CONULTING ENGINEER
Oil, Gas Gasoline plants design, construction, operation, consultations, valuations, reports, investigations, new processes.
Box 1455, Tulsa, Okla.

Cheap American Oil For Foreign Market Aids the Dutch-Shell

Exceptions are that the Royal Dutch-Shell combine will make a better showing on this year's operation than last, despite the slump in oil prices, says a London dispatch to the Wall Street Journal. This year's turnover will be close to 14,000,000 tons, against about 10,000,000 tons last year. Shell Transport & Trading Co. last year earned net profit of £4,633,160 and Royal Dutch Petroleum f187,730,478 and declared dividends of 22½ per cent tax free and 26½ per cent on common stock, respectively.

Dutch-Shell combine has been fortunate in having the benefits of American flush fields without American market limitations. Its Mexican and East Indies refineries were both in need of oil, due to the failure in the one case of Mexican Eagle and in the other of necessary restriction of output because of high taxation. Oil could be shipped to East Indies and refined cheaper than it could be produced there. And it then could be marketed in the East and Europe at better prices than obtainable in America. An additional advantage has been the rise in price of fuel oil. It also is estimated that the combine will go into the new year with 2,000,000 tons stored at low cost. Collapse of Mexican Eagle is not expected to influence the combine's profits. Both Royal Dutch and Shell are believed to have written down their present holdings in this company to nil, by disposing of thir bonus shares at high prices.

CALIFORNIA WILDCATS MANY BUT DOUBTFUL

Where the next oil field in southern California will be is hard to answer. Especially is the location of the field difficult when the outlook and indications of the wildcat wells now drilling is considered. Never were more wildcats drilling, but never have so many looked doubtful. There are 40 wildcat wells drilling in the southern field today, and not more than six look promising, says the Petroleum Reporter.

Every field in southern California has shown commercial production above the 3,800-foot mark, and if this rule is applied rigidly to the wildcats now drilling the elimination becomes rather heavy. Even Santa Fe Springs, famous for its deep Meyer sand, had commercial production in the Foy sand above 3,800 feet. Commercial production was developed at Huntington Beach at 2,600; Montebello at 3,500; Richfield at 3,100 and 3,500. Wildcat wells drilling beyond the 3,800-foot mark continue on without finding oil. If a number of new fields in the south are to be developed soon there will have to be some exception to this rule.

ANGLO-PERSIAN DIVIDEND

Anglo-Persian Oil Co. directors recommend 10 per cent dividend on the common, compared with 20 per cent in each of the previous three years. As this is for the year ended March 31, 1923, before heavy production in America was felt acutely, it comes as a surprise. The statement for the fiscal year shows £1,777,788 carried forward, against £1,739,173 at the end of the previous year. Anglo-Persian has £8,950,000 of £1 par value ordinary shares authorized and outstanding.

FRENCH OIL IMPORTS GAIN

The classified French trade statistics state that in 1922 imports of petroleum and oil products into France exceeded 1,000,000 tons for the first time. In 1913 the total was 535,000 tons. In 1918 the imports had risen to 934,000, in 1919 they declined to 750,000, in 1920 they rose to 993,000, declining in 1921 to 820,000 tons.

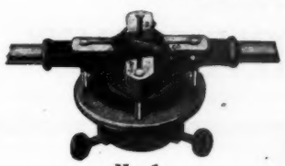
TULSA BOILER & SHEET IRON WORKS
PIONEER TANK & BOILER COMPANY

A NEW NAME FOR AN OLD FRIEND

WHAT'S in a name, ayway? The refinery construction work we are doing under the name "Pioneer" is just the same high-grade as when it bore the name "Tulsa Boiler and Sheet Iron." For 18 years, as the "Tulsa Boiler and Sheet Iron Works" we have turned out tanks and refinery steel construction that made good friends for us among the wise buyers of the mid-continent. We pioneered in giving these people "close to home" service on the best kind of work. Now, under our new name, The Pioneer Tank and Boiler Company, we're all set with the men, machinery and money to keep on growing under the Pioneer banner like we did when Tulsa Boiler and Sheet Iron was on our letterhead. There is no change in our organization. Get Pioneer quotations on tank and refinery construction work.

PIONEER TANK & BOILER CO.
(Formerly Tulsa Boiler & Sheet Iron Works)
Box 1926, TULSA, OKLA.

NYE
Toledo Type
Die Stocks


No. 1

THREADING SIZE
1-INCH TO 2-INCH

No. 1A Ratchet

The rugged construction and few working parts account for the simplicity and durability of these Nye Toledo Type Models. Ask for them from your jobber on 30 days' trial. Manufactured and guaranteed by

The Nye Tool & Machine Works
108-128 North Jefferson St.
Chicago, U. S. A.

A NON-MIRING WAGON
Capacity, 10 tons. Adapted for hauling over sand, mud, bad roads or soft ground. Loose fit of track band minimizes wear on pins. Trussed track rigidly flat on ground at all times. More freight with less power. Will carry capacity loads wherever animals or tractors can work. Shipments from Chicago factory direct to you at any point. Information and prices on request.

ATHEY TRUSS WHEEL CO., 130N. Wells St., Chicago, U. S. A.
Cable address: "Trusswheel, Chicago"

ATHEY TRUSS WHEEL WAGON

Gasoline Plants Topping Plants
Gas Compressing Stations Refineries
Designed and Installed Complete
FEDERAL ENGINEERING COMPANY
PITTSBURGH, PA.

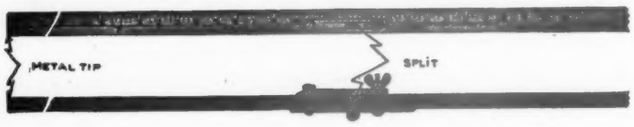
AMERICAN ZINC, LEAD & SMELTING CO.

SULPHURIC ACID
60 & 66 DEGREE

1005-1013 PIERCE BUILDING
ST. LOUIS, MO.

PLANTS ✦ East St. Louis, Ill. ✦ Hillsboro, Ill.

GAUGE POLES
Any Length For Oil Measurements



"MARSH-JOINT"

For sale by oil country supply houses or furnished promptly by the factory at Titusville, Pa.

Correspondence Solicited

MARSH GAUGE POLE COMPANY
TITUSVILLE, PA.

NATIONAL AIROIL BURNER

This Booklet is yours for the asking

If you burn oil use
AIROIL BURNERS

NATIONAL AIROIL BURNER CO.
922 Thompson St., Philadelphia

METERS

For Measuring Production and Distribution of

Oil—Gasoline—Gas

and Other Fluids

PITTSBURGH METER COMPANY
General Office and Works: EAST PITTSBURGH, PA.

SALES OFFICES:
New York—50 Church St.
Chicago—5 South Wabash Ave.
Kansas City—Mutual Bldg.
Columbia, S. C.—1433 Main St.
Seattle—4038 Arcade Bldg.
Los Angeles Union Bank Bldg.

POLAND INCREASING ITS OIL PRODUCTION

The slow but constant increase in the crude oil production in Poland is to be observed since the middle of last year, as until then from 1910 onward the production was still falling. This, Dr. Stefan Bartosewicz writes in the London Petroleum Times, must be put to the credit of the Polish State, which, although it has been in existence for scarcely five years, has been carrying a righteous petroleum policy, especially from that moment when the sequestration of crude oil and oil products has been abolished.

Besides the increase in production, another favorable fact of paramount importance for the further development of the oil industry must be noted—a much more efficient management of the oil industry under the Polish in comparison with the Austrian Government. Great economy in the heating material was introduced through the employment of gas and crude oil motors, through the electrification of mines, through the use of up-to-date methods in drilling, finally through the making of liquid gasoline out of the oil gas coming from the wells. All those factors are making the profits of the mines bigger. Actually at least 35 per cent of gas out of the wells goes through appliances for condensing or absorbing of gasoline, and only afterwards the gas is being used for heating purposes.

The drilling activity is still increasing, as can be seen from the following figures: In 1920, 59,205 meters were drilled on all Polish mines; in 1921, 66,811 meters; in 1922, 89,250; whereas in the first six months of this year the number of meters amounted to 45,000.

In order to appreciate properly the efforts made in the Polish oil mining industry, it must not be left out of sight that crude oil on the new wells was chiefly obtained on the depths lower than 1,500 meters. The drilling in such depth, though very slow and expensive, is giving great prospects for the obtainment of crude oil. Presently, in the southern part of Tustanowice, wells are being drilled in which crude oil is being obtained at the depth of 1,700 meters or even deeper. In the southern part of Tustanowice the oil-bearing territories are the property of the Polish State. At the present moment the Ministry of Industry and Commerce (Polish Board of Trade) is authorized by the Decree of the Ministers' Council of September last to lease the State's oil territories.

ECONOMICALLY SOUND

The result producing benefits of The Oil and Gas Journal Classified Wants Section is helping the men of the industry to get the maximum good out of their equipment.

Good machinery, equipment, etc., is being kept in operation by reason of alert men buying and selling through the Classified Wants Section.

These men know that it is economically sound for a concern to sell good equipment which it cannot use. Therefore, thrifty executives use the Classified Wants Section as an economizing move that is helpful to the entire industry.

Read the good advertisements in the Classified Wants Section. It will help you.

FRENCH SEEK RUMANIAN OIL

The State Department at Washington is reported to have addressed an inquiry to Rumania regarding peculiar oil negotiations with France. Rumania, it seems, sought a loan from the French Government, which asked in return for oil concessions similar to those France obtained from Poland but Rumania declined. The French Government, it is said, then had a French group offer to lend Rumania 500,000,000 francs if the group was given the dues in oil and gasoline which the Rumanian Government receives from Rumanian companies.

W. G. MATTESON
CONSULTING GEOLOGIST
Specialist examinations and appraisals Mid-Continent and Gulf Coast Oil Properties
314 Texas State Bank, Fort Worth, Tex.
Box 471, G. P. O., New York City

F. JULIUS FOHS
OIL GEOLOGIST
1220 Kirby Bldg., Dallas, Tex.
First National Bank Bldg., Tulsa, Okla.
and 60 Broadway, New York
Tables: Fohsoil, Bentley & McNeil Codes
No professional work undertaken.

William H. Foster W. A. Reiter
FOSTER & REITER
CONSULTING GEOLOGISTS
19th Floor, Magnolia Bldg., Dallas
Atlas Life Bldg., Tulsa

WALTER STALDER
OIL GEOLOGIST
Crocker Bldg.
SAN FRANCISCO, CALIF.

FRANK C. GREENE
GEOLOGIST
Announces removal of office to 8th
Exchange National Bank Bldg.
Tulsa, Okla.
Office Phone Osage 7662
Residence Phone Osage 2876

V. H. McNUTT
CONSULTING GEOLOGIST AND APPRAISER
Specializing in Northern Oklahoma and Southern Kansas Fields
Rooms 404-405 Commercial Bldg.
TULSA, OKLA.

LUCIEN BECKNER
CONSULTING GEOLOGIST
Twenty-odd years' experience in Kentucky and the Southern States
39 South Main St. Phones 1131 and 11
WINCHESTER, KY.

C. W. WASHBURNE
GEOLOGIST
2 Rector Street New York

E. J. LONGYEAR CO.
MINING ENGINEERS AND GEOLOGISTS
Diamond Core Drill Manufacturers
Diamond Drilling Contractors
MINNEAPOLIS, MINN.

EDWIN B. HOPKINS
CONSULTING GEOLOGIST
25 Broadway
NEW YORK

GEORGE A. BURRELL
PETROLEUM NATURAL GAS
GASOLINE
501 Columbia Bank Bldg.
PITTSBURGH, PA.

JOHN L. RICH
PETROLEUM GEOLOGIST
Box 3, Ottawa, Kansas

J. ELMER THOMAS
CONSULTING GEOLOGIST
751 First National Bank Bldg.
CHICAGO, ILL.

GLEN M. RUBY
GEOLOGIST
Specializes in examinations and appraisals of oil lands within the Rocky Mountain States
329 U. S. National Bank Bldg.
DENVER, COLO.

ROSWELL H. JOHNSON
GEOLOGIST AND APPRAISER
Oil and Gas Bldg.
University of Pittsburgh
PITTSBURGH, PA.

Robert H. Wood Virgil O. Wood
WOOD & WOOD
PETROLEUM GEOLOGISTS AND APPRAISERS
Phone Cedar 1725—816 Daniel Bldg.
TULSA, OKLA.

CARL B. ANDERSON
GEOLOGIST AND PETROLEUM ENGINEER
804 Kennedy Bldg.
TULSA, OKLA.

Charles T. Kirk James E. Hoover
KIRK & HOOVER
Geology, Valuation, Investments
American and Foreign
Osage 2820, 9504—432 Mayo Bldg.
TULSA, OKLA.

SAMUEL J. CAUDILL
Geologist and Petroleum Engineer
Valuation—Depletion
For Financial or Income Tax Purposes
1016 Atlas Life Bldg., Tulsa, Okla.

Wilbur E. Brown G. Thomsen, Jr.
BROWN & THOMSEN
GEOLOGISTS
218½ West Grand Ave.
OKLAHOMA CITY, OKLA.

H. H. MESSIMER
TANK GAUGING ENGINEER
Prompt, Efficient Tank Table Service
Prices Reasonable
P. O. Box 257 105 Midco Bldg.
Phone Osage 3142
Tulsa, Okla.

PREWITT & HAUSER
ENGINEERS
Valuations of Oil Properties
For Financing and Income Taxes
219 Iowa Bldg.
Tulsa, Oklahoma

URGE GERMAN METHOD IN ALBERTA TAR SAND

OTTAWA, Dec. 10.—New oil recovery methods, which it is contended, might be used to develop the tar sands of Alberta, have been reported to the Minister of the Interior by Dr. Charles Camsell, Deputy Minister of Mines.

Dr. Camsell, who recently toured the mining districts of France and Germany, declared that he had seen in operation at Hanover, Germany, methods which he thought would be applicable to the large deposits in northern Alberta of tar sands, heavily impregnated with petroleum, commercial exploitation of which has not hitherto been considered feasible.

In the German fields, he said, the oil was collected by allowing it to seep into shafts sometimes 800 feet deep. Residual oil in the sand was obtained by washing with hot water the sand, which was mined like coal. The total recovery, he declared, was 99 per cent, although it takes from one to three years to drain a shaft. The cost, he said, was well within the price for oil obtained from Ontario fields in 1922.

STANDARD TO OPERATE STILLS FOR ASPHALT

CASPER, Wyo., Dec. 10.—The Greybull refinery of the Standard of Indiana is to start operating new stills for the manufacture of asphalt shortly and Hamilton Dome in Warm Springs County is to go to full production to supply the crude for this output. Hamilton Dome is being operated by the Western State Oil & Land Co. and produces a black crude that contains a large asphalt content.

A new refinery is being built at Lethbridge, Canada, by local capital to operate on crude from the Sunburst Field in northern Montana. There is a pipe line across the border at Sweetgrass, Mont., and this line carries oil from the Sunburst Field into Canada so the buyers of crude for the new refinery can purchase oil after its delivery into their country and do away with the importation troubles that have prevented much refinery work in Canada in the past. The new refinery will be 500-barrel capacity to start.

REPORTS ON ECUADOR OIL

Substantial progress is being made in the development of the oil fields of Ecuador, according to the annual report of Anglo-Ecuadorean Oilfields, Ltd. James Rennie, secretary of the company, outlines the progress in the report, to be submitted to the stockholders at the annual meeting in London, December 3, but he says that "until the railway (which is being built by the company) is completed it is not practical to proceed rapidly with the production of oil, nor would it be possible to transport the oil to a market until the pipe line and tanks are finished." The company is also building a pipe line under the sea for loading steamers.

"The directors are glad to inform shareholders," says the report, "that while the period of fully preparing the above ground equipment for the company's future needs is necessarily slow in so remote a country and with inefficient labor, the wells which have been completed have all shown a satisfactory production of high quality oil."

ARKANSAS GASOLINE TAX

SHREVEPORT, La., Dec. 10.—Unexpected heavy payments by manufacturers and wholesalers have brought the October 3-cent gasoline tax in Arkansas to a point above the previous high record of September, and it is now expected a still greater increase may be expected, to some extent due to a number of delinquent payments still to be made. September's record of $155,505.18 has been exceeded to the extent of $2,754.92, according to State Auditor James Guy Tucker.

STEEL
for Immediate Shipment from Stock
Bars, Plates, Rivets, Tool Steel, Shapes, Sheets, Bolts, Welding Rods, Structurals, Tubes, Wire, Concrete Reinforcing, Rails, Pipe, Turnbuckles, Small Tools, etc.
Write for Ryerson Journal and Stock List
JOSEPH T. RYERSON & SON INC.
CHICAGO ST. LOUIS CINCINNATI DETROIT BUFFALO NEW YORK

SOUTH CHESTER TUBE CO.
Manufacturers of
Casing, Tubing, Drive Pipe, Rotary Drill Pipe, Line Pipe
Merchant Pipe
Mill and Main Office, Chester, Pa.
Sales Office, 30 Church St., New York
Sales Office, 801 Columbia Bank Bldg., Pittsburgh, Pa.
Our products are carried in stock and distributed by the following supply houses:
Prichard Supply Co.—Mannington, W. Va., Waynesburg, Pa.
Branchland Supply Co.—Huntington, W. Va.; Paintsville, Ky.
G. H. Trainer—Salem, W. Va.
United Hardware & Supply Co.—Titusville, Pa.; Oil City, Pa.; Erie, Pa.
Kane Supply Co.—Kane, Pa.
Petroleum Supply Co.—Norphlet, Ark.; Smackover, Ark.; El Dorado, Ark.; Shreveport, La.; Beaumont, Texas; Houston, Texas; Mexia, Texas.
McEwen Bros.—Wellsville, N. Y.
International Supply Co.—Main Office, Tulsa, Okla.; Various Branch Stores—Bartlesville, Bristow, Bryant, Burbank, Drumright, Jennings, Okemah, Okmulgee, Pawhuska, Wetumka, Holdenville, Wewoka, Tonkawa and Shidler, Okla.; El Dorado, Madison and Virgil, Kan.; Casper, Wyo.; Sunburst, Mont.
Chas. M. Woods Co.—Pacific Coast points. Stocks at Los Angeles, Torrance, San Pedro and Taft, California.

Water Tube Boilers
IMMEDIATE DELIVERY
48-250 Horse Power, New, Standard Cross Drum Water Tube Boilers, built for 200 lbs. working pressure. Complete with steel casing, steam fittings and grates. Ready for immediate delivery from Chicago, Dumont, N. J., and Orange, Tex.
HARRIS BROS. COMPANY
Thirty-fifth and Iron Streets
CHICAGO, ILL.

LUFKIN TAPES
FOR GAUGING, STRAPPING AND GENERAL MEASURING
The Recognized Standard in Every Field
Among others, the "ATLAS," a most durable and practical gauging tape; Steel and Woven Tapes of all grades and styles in metal and in leather-covered cases.
Specify LUFKIN to your hardware or supply house. Send for catalogue "Tapes and Rules for the Oil Fields."
THE LUFKIN RULE CO.
SAGINAW, MICH.
New York Windsor, Ont.

WARD-WAY BUSSES

MAKE THREE ROUND TRIPS DAILY BETWEEN TULSA AND MUSKOGEE

Leave Tulsa from Third and Cincinnati, Tulsa Confectionary, Phone Osage 1448, at 8:00 A. M., 2:00 P. M. and 7:00 P. M. Returning, leave Severs Hotel, Muskogee, at 8:00 A. M., 3:00 P. M. and 6:30 P. M.

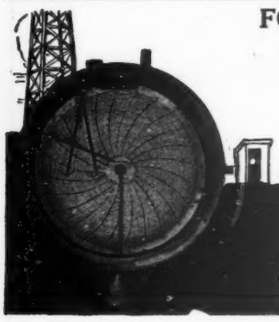
Essex Lubricating Devices Are Oil Country Favorites!

Because they are made right and sold right. 22 years on the market.

Sold by jobbers everywhere.

Catalogue on request

Essex Brass Corporation
2000 Franklin Street
DETROIT, MICH.



FOXBORO ORIFICE METER

A rugged accurate Orifice Meter, for measuring Casinghead Gas, Natural Gas, Oil Steam, Gasoline, Water. Write for Bulletin O113-1.

THE FOXBORO CO., Inc.
FOXBORO, MASS., U. S. A.
213 S. Cincinnati Ave., Tulsa, Okla.
New York Chicago San Francisco Boston
Pittsburgh Philadelphia Birmingham Cleveland
5070

FOXBORO
TRADE MARK
THE COMPASS OF INDUSTRY

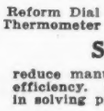
For Superior Break-out Service

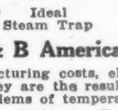
For both Standard and Rotary drilling, no other tong can compare with it for rugged strength, ease of operation and dependability.

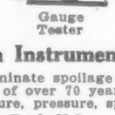
Let us tell you all about it. What's your name? Address?

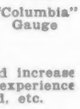
J. H. WILLIAMS & CO.
Brooklyn Buffalo Chicago

WILLIAMS
SUPERIOR DROP-FORGED TOOLS


Reform Dial Thermometer


Ideal Steam Trap


Gauge Tester



"Columbia" Gauge

S & B American Instruments

reduce manufacturing costs, eliminate spoilage and increase efficiency. They are the result of over 70 years' experience in solving problems of temperature, pressure, speed, etc.

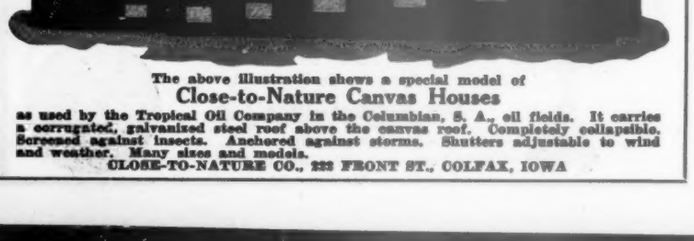
Write for Text Book N-5

Boston Buffalo Chicago Cleveland

American Schaeffer & Budenberg Corporation
Schaeffer & Budenberg Mfg. Co.
American Steam Gauge & Valve Mfg. Co.
BROOKLYN, N. Y.

Detroit Los Angeles New Orleans Philadelphia Pittsburgh

"CRESCENT"



The above illustration shows a special model of
Close-to-Nature Canvas Houses
as used by the Tropical Oil Company in the Columbian, S. A., oil fields. It carries a corrugated, galvanized steel roof above the canvas roof. Completely collapsible. Screened against insects. Anchored against storms. Shutters adjustable to wind and weather. Many sizes and models.
CLOSE-TO-NATURE CO., 222 FRONT ST., COLFAX, IOWA

GULF COAST OUTPUT FOR NOVEMBER 1923

HOUSTON, Tex., Dec. 10.—Gross production in the Coastal Pools and the light gravity fields to the southwest shows a decrease of 97,608 bbls. during the month of November compared with the previous month. The total for November is 2,929,170 bbls., against 3,026,778 bbls. during October.

The Hull Pool showed the largest decline, falling off 52,442 bbls., Humble coming next with a decline of 26,082 bbls. for the 30-day period, compared with 31 days in October. The West Columbia district declined 15,875 bbls. and Goose Creek, 15,670 bbls. The Orange Pool registered an increase of 80,365 bbls., due to the completing of big wells in the deeper sands.

Looking back over the 11 months of the year, a steady decline is noted from January to July and August, which months recorded increases due to nice wells on the north and northwest sides of the Hull Dome. The largest gross output was during January, the estimate for that month being 3,787,884 bbls. In comparison with that month the gross for November shows a decrease of 858,714 bbls.

At the beginning of the year the credit balance quotations for Coastal crude was $1.25. The price was advanced to $1.50 in February and to $1.75 March 15. Late in June the pipe lines established grades and cut the price of Grade B 25 cents, making Grade A, $1.75 and Grade B, $1.50. Both grades were reduced 25 cents in July and in August another cut brought the price down to $1 per bbl. October 17, the Gulf Co. reduced the quotations to 75 cents, but the other lines continued to pay $1 and on November the Gulf Co. advanced the price to $1.

The following table gives the estimated daily average and gross for each district:

District—	Daily Av.	Gross Prod.
Batson	1,149	34,470
Blue Ridge	744	22,320
Barber Hill	348	10,440
Dayton	61	1,830
Damon Mound	1,903	57,090
Edgerly (La.)	419	12,570
Goose Creek	13,376	401,280
Humble	5,560	166,800
Hull	20,514	615,420
Jennings (La.)	721	21,630
Markham	105	3,150
Orange	17,378	521,340
Pierce Junction	654	19,620
Spindletop	824	24,720
Saratoga	1,782	53,460
Sour Lake	5,093	152,790
Somerset and Piedras P.	3,064	91,920
Vinton (La.)	5,873	176,190
Welsh and Anse La Bute	82	2,460
West Columbia	14,294	428,820
Miscellaneous (Milam County, Big Creek, Big Hill, Nacogdoches, etc.)	3,675	110,850
Total November	97,619	2,929,170
Total October	97,638	3,026,778
Decrease		97,608

CAT CREEK'S TOTAL OUTPUT

CASPER, Wyo., Dec. 8.—Statistics compiled in Montana, place the entire amount of oil marketed from the Cat Creek Field since opening of field in February, 1920, at 5,241,637 bbls. For a part of this period, Cat Creek crude brought $3.00 a barrel; present price is $1.10. Taking into consideration price fluctuations, return for crude produced amounted to over $10,000,000. These figures represent the oil carried by the pipe lines only, no account being taken of the crude used in the field for fuel, etc.

APPROVE STANDARDS

The committee of the Mid-Continent Oil and Gas Association has formally approved the recommended standards of rig irons as proposed by the Purchasing Agents Association of Tulsa more than two years ago. This committee was appointed at the request of H. J. Lockart, general manager of the Parkersburg Rig & Reel Co., and who is chairman of the American Petroleum Institute committee, having this matter in charge.

BROKAW, DIXON, GARNER & McKEE
GEOLOGISTS
PETROLEUM ENGINEERS
Examinations, Appraisals
Estimates of Oil Reserves
120 Broadway New York

Amil A. Anderson Frank B. Anderson
ANDERSON & ANDERSON
Mining Engineers and Petroleum Geologists
304 Bitting Building
Wichita, Kans.
Telephone Market 2887

ROBERT W. HUNT CO.
Inspecting and Testing Engineers
Inspection of Oil Line Pipe, Oil Well Casing, Tanks, Drums and Barrels
Inspection During Manufacture
Resident Inspectors at Pipe and Steel Mills
2200 Insurance Exchg., Chicago

RALPH M. WEAVER, Jr.
PETROLEUM GEOLOGIST
Wynnewood, Okla.

IRVINE E. STEWART
GEOLOGIST
421 Ford Building
GREAT FALLS, MONTANA

VERGIL NEAL BROWN
Consulting Geologist and Engineer
Geological Surveys and Appraisals
721 New Wright Building
Tulsa, Okla.

Hector Crandall B. F. Murta
CRANDALL & MURTA
PETROLEUM GEOLOGISTS
Phone Cedar 874
345 Kennedy Bldg. TULSA, OKLA.

GEO. C. MATSON
PETROLEUM GEOLOGIST AND ENGINEER
Geological Surveys, Appraisals for Taxation or Financing
Osage 2049—Phones—Osage 1332
408 Cosden Bldg. TULSA, OKLA.

Frank A. Herald John M. Herald
HERALD BROTHERS
GEOLOGISTS
PETROLEUM ENGINEERS
303 Cosden Building Phone Cedar 5333
TULSA, OKLAHOMA

ALBERT HILL FAY
CONSULTING MINING ENGINEER
COAL MINE and OIL WELL valuations in connection with Federal Income Taxes; depletion problems; reports for investors
Telephone Main 2223
907 Fifteenth St. N. W.
Washington, D. C.

G. JEFFREYS
CONSULTING GEOLOGIST
907-908 Russell Building
San Antonio, Texas

Detailed Operations in Western Fields for November, 1923

SUMMARY OF ALL FIELDS

Wells Completed

Fields—	Comp.	Prod.	Dry	Gas
Eastern	355	1,543	50	84
Lima	51	729	8	0
Indiana	9	45	3	1
Central Ohio	95	172	27	63
Kentucky-Tenn.	142	1,818	47	5
Illinois	12	149	2	5
Kansas	29	613	16	2
Oklahoma	239	52,900	89	28
North Texas	75	7,418	25	4
East Cent. Texas	136	398,628	18	0
N. Louisiana-Arkansas	152	40,438	29	18
Gulf Coast	90	26,057	16	4
Wyoming	43	14,669	4	0
Montana	22	1,095	6	0
Total November	1,450	546,275	340	214
Total October	1,598	527,056	369	188
Difference	148	19,219	29	26

Rigs and Wells Drilling

Fields—	Rigs	Drg.	Total
Eastern	181	343	524
Lima	4	43	47
Indiana	1	23	24
Central Ohio	46	126	172
Kentucky-Tennessee	16	317	333
Illinois	3	29	23
Kansas	54	140	194
Oklahoma	231	952	1,183
North Texas	61	184	245
East Central Texas	42	216	258
N. Louisiana-Ark.	94	171	265
Gulf Coast	84	278	362
Wyoming	94	389	483
Montana	20	168	188
Utah	0	24	24
Totals October	964	3,580	4,544
Total November	931	3,394	4,325
Difference	33	186	219

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. The rigs and drilling wells are set forth in a similar manner. In lines where the Section, Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

OKLAHOMA FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Washington-Nowata-Rogers	0	0	0	0
Osage	32	4,288	9	5
Tulsa	5	0	4	1
Okmulgee	16	340	5	4
Okfuskee, Hughes, Seminole and McIntosh	28	15,846	14	1
Muskogee-Wagoner	9	95	5	2
Creek	34	8,079	17	1
Pawnee	6	785	0	1
Payne	4	52	2	0
Kay	21	13,859	4	0
Garfield-Noble	31	6,378	8	0
Carter	15	2,145	1	5
Stephens-Cotton	17	644	7	4
Miscellaneous	21	389	13	4
Total November	239	52,900	89	28
Total October	304	36,626	79	25
Difference	65	16,274	10	3

Summary of New Operations

County—	Rigs	Drg.	Total
Washington-Nowata-Rogers	0	0	0
Osage	33	130	163
Tulsa	8	15	23
Okmulgee	25	46	71
Okfuskee-Hughes-Seminole-McIntosh	29	81	110
Muskogee-Wagoner	2	18	20
Creek	27	77	104
Pawnee	4	35	39
Payne	1	16	17
Kay	30	91	121
Garfield-Noble	39	81	120
Carter	10	119	129
Stephens-Cotton	1	24	25
Miscellaneous	22	219	241
Total November	231	952	1,183
Total October	224	1,018	1,242
Difference	7	66	59

OSAGE COUNTY

28-20-12 Westland et al 3 1080
9-22-11 Owen-Osage 244 ..... gas
4-20-11 Wortham-Reilly 1 ..... dry
17-26- 7 Oliphant et al 1 485
24-27- 5 Gypsy Oil 7 1200
4- 9-11 Bird, Magnolia Pet. 1 30
9- 9-11 Bruner, Tidal Osage 1 100
28-20-12 Riverland Co. 1 420
7-22-11 Finance Oil 5 ..... dry
4-23-11 Owen-Osage 253 ..... dry
11-21- 9 Devonian & Moore 2 ..... dry
17-26- 6 Carter Oil 6 96
20-27- 6 Sinclair Oil and Gas 16 300
34-24-11 Owen Osage 254 ..... gas
25-23- 7 Plymouth & Miller 1 12
1-21- 8 Sand Springs Home 75 ..... gas
25-27- 5 Phillips-Skelly 4 200
9-22-11 Owen-Osage 251 ..... dry
31-20-11 Sand Springs Home 3 45
Sand Springs Home 4 76
Sand Springs Home 5 ..... dry
Sand Springs Home 6 35
Sand Springs Home 7 15
C. E. Kingsbury 2 50
17-29-12 Owen-Osage 246 ..... dry
29-29-12 Owen-Osage 245 ..... dry
21-24- 9 Litrell, Kruger & Clark 1 10
32-24- 9 Plains Pet. 2 15
34-25- 9 L. T. I. 307 ..... gas
6-26- 6 Lorraine Oil 15 120
8-20-12 Osage-Okla. 629 ..... gas
22-23-11 Owen-Osage 255 ..... dry

Wells completed 32
Production 4288
Dry 9
Gas 5
Gas production 23,750,000

TULSA COUNTY

6-19-12 Woodward, Sand Springs Home 1 ..... gas
2-18-14 Costello, May Bros. 1 ..... dry
27-16-12 Coleman, Margay Oil 1 ..... dry
12-19-11 Sand Springs Park, Sand Spgs Home 1 ..... dry
25-17-13 Williams, McCullough 1 ..... abd

Wells completed 5
Production 0
Dry 4
Gas 1
Gas production 5,000,000

OKMULGEE COUNTY

6-12-13 Holleman, Smith & King 4 ... dry
4-11-12 Hawkins, Brink Oil 3 30
14-15-12 Hogan, Texolean Oil 2 ..... gas
26-13-13 Asbury, Mutual Oil 3 ..... dry
5-11-12 Hawkins, E. L. Black et al 1. gas
6-12-12 Mitchell, Frank King 3 125
33-12-13 McDaniels, Waite Phillips 1.. dry
15-13-14 Scott, Hall & Strum 9 35
Scott, Hall & Strum 10 50
15-13-14 Scott, Hall & Strum 11 35
19-12-13 Burgess, Bland 1 ..... abd
3-11-12 Barnett, W. B. Pine 4-A..... dry
28-15-12 Cole, Jordan & Thompson 2... gas
24-13-12 Hillman, Roxaline Oil 4 15
2-14-13 Harris, Lampton 4 ..... gas
20-13-11 Grayson, Ohio-Okla Oil 1 50

Wells completed 16
Production 340
Dry 5
Gas 4
Gas production 20,000,000

OKFUSKEE, HUGHES, SEMINOLE AND McINTOSH COUNTIES

1-12-11 Thompson, H. G. Fair 3 350
6-10-11 Harjo, Prairie Oil & Gas 1... dry
19-12-14 Bird, Fred Phillips 3 ..... dry
27-11-15 Rich, H. & H. Oil 1 ..... dry
Ireland, H. & H. Oil 2 4
19- 8- 8 Townsite, Ramsey 1 ..... abd
32- 8- 8 Parker, Magnolia Pet. 1 210
34-11-15 K. Hawkins, H. & H. Oil 1... dry
32- 8- 8 Foster, Dixie Oil 2 1400
32- 8- 8 Townsite, Ramsey 2 ..... abd
26-11- 8 Tiger, Gardner Pet. 1 ..... dry
20-12- 9 Yahola, Howarth Oil 1 ..... dry
14- 7- 8 Narcome, Prod. & Ref. 1 ..... gas
29- 8- 8 Walker, Independent Oil & Gas 1 1617
33- 8- 8 Foster, Dixie Oil 2 2100
Foster, Prod. & Ref. 1 3000
3-13- 7 Independent 1 ..... abd
27-11-15 Ireland, H. & H. Oil 3..... 3
34-11-15 S. Hawkins, H. & H. Oil 1... dry
26-10-11 Harjo, Prairie O. & G. 1..... dry
4- 9-11 Porter, Magnolia 1 32
13-11-11 Barnett, Waite Phillips 5 ..... dry
24-11-11 Fields, Phillips Pet. 14 ..... dry
17-12- 8 Johnson, Howarth Oil 1 ..... dry
32- 8- 8 Long, Dixie Oil 2-A 980
33- 8- 8 Foster, Dixie Oil 1 2750
Foster, Prod. & Ref. 5 2700
Foster, Prod. & Ref. 6 1200

Wells completed 28
Production 15846
Dry 14
Gas 1
Gas production 4,000,000

MUSKOGEE-WAGONER COUNTIES

5-15-15 Hawkins, Cook & George 1... 20
23-14-15 Walker, Crabtree & Simmons 1 dry
27-18-15 Bird, M. A. Wilder 1 ..... dry
19-14-16 Bean, Vogler & Lightner 5... gas
15-13-14 Scott, Hall & Stearn 10 75
24-17-15 Lovett, Davis et al 1 ..... dry
2-18-14 Castella, Mays Brothers 1 ... dry
19-17-16 Bruner, Sewell et al 28 ..... dry
6-14-15 Connor, Link Oil & Hazlett 9.. gas

Wells completed 9
Production 95
Dry 5
Gas 2
Gas production 1,500,000

CREEK COUNTY

36-17- 8 Kelly, Waite Phillips 4 ..... dry
29-15-10 McIntosh, Continental Oil 3... 375
McIntosh, Skelly Oil 2 50
McIntosh, Waite Phillips 2 ... 50
30-15-10 Unallotted, Wilcox & Oswalt 2 dry
22-14-10 McIntosh, Donnelly 1 ..... dry
29-18-10 Henry, Sapulpa Refining 2.... 30
22-16- 8 Knoll, Laurel Oil & Gas 2.... dry
27-16- 8 Beaver, Red Bank Oil 3 ..... dry
13-14- 9 Prairie Oil & Gas 1 25
9-14- 9 Smith, Kennedy et al 1 ..... dry
36-17- 8 Farres, Clark et al 3 145
2-15- 8 Chapman, Roland Oil 3 ..... dry
22-16- 8 Knoll, Laurel Oil & Gas 2 .... dry
27-16- 8 Harriott, Ryan Consolidated Pet. 1 ..... dry
15-19- 9 Postoak, Shaffer O. & R. 2... 300
32-17- 8 Washington, Olean Pet. 3.... dry
16-15- 8 Fish, Eastern Oil 1 ..... dry
16-16- 9 Barnes, Carter Oil 2 ..... dry
27-14- 8 Jacobs, The Texas Co. 5 25
Bartlett, The Texas Co. 2 ... 35
2-14-10 Dukes, Kerschner 1 ..... dry
22-16- 8 Wilson, Cortez Oil 3 2094
16-16- 8 E. Harjo, Skelly Oil 1 ..... abd
16-15- 8 Simons, Gypsy Oil 2 520
17-15- 8 Yahola, Pure Oil 2 1680
22-16- 8 Sloan, Carter Oil 2..... 1700
17-15- 8 Yahola, Pure Oil 6 1025
27-16- 8 Beaver, Red Bank Oil 3 ..... dry
2-16- 9 Amerada Pet. 1 ..... dry
17-17-11 Wacoche, Shaffer Oil & Ref.. 15
28-17-11 Wilson, McClung et al 1 10
19-17- 9 Wright, Bu-Vi-Bar Pet. 1.... gas
34-18- 9 Drake Oil 1 ..... dry

Wells completed 34
Production 8079
Dry 17
Gas 1
Gas production 8,000,000

PAWNEE COUNTY

25-20- 9 Smith, Ed C. Lee 2 ..... gas
33-23- 3 Robedeaux, Watchorn O. & G. 3 625
16-20- 6 School Land, Magnolia Pet. 3 75
17-20- 7 Canfield, Ora Stine et al 1.... 50
24-20- 7 Ledder, Kanola Oil 4 20
4-20- 7 Townsite, Mason & Lyons 2.. 15

Wells completed 6
Production 785
Dry 0
Gas 1
Gas production 2,000,000

PAYNE COUNTY

20-19- 6 Applegate, Magnolia Pet. 4... 40
26-18- 5 Catron, Home Gas 10 ..... abd
Catron, Home Gas 5 ..... abd
Parker, Home Gas 4 12

Wells completed 4
Production 52
Dry 2
Gas 0
Gas production 0

KAY COUNTY

16-27-1w Slocum, Ostot et al 1 750
28-26-1w Mahoney, McCaskey and Wentz 1 25
34-25-1w Endicott, Comar Oil 7-A 220
Beverlin, Comar Oil 13-A 87
Beverlin, Comar Oil 22 203
35-25-1w Endicott, Comar Oil 8-B 78
27-27-1e Powell, Ballentine et al 1.... abd
34-25-1w Beverlin, Comar Oil 4 50
35-25-1w Endicott, Comar Oil 10 250
34-25-1w Endicott, Comar Oil 8 ..... abd
Endicott, Comar Oil 8-B 136
35-25-1w Endicott, Comar Oil 1-B 736
4-27-5w Gypsy Oil 3 2400
Gypsy Oil 4 800
9-27-5w Phillips Pet. 2 600
Phillips Pet. 5 1400
Phillips Pet. 6 2400
33-29-1e Snyder, Lewis et al 2 ..... dry
33-28-1e Elders, Wilson Gas Co. 1 .... dry
3-27-5e Munroe, The Texas Co. 1.....1728
9-27-5e Phillips Pet. 4 588
10-27-5 R. Sand, Cosden Oil & Gas Co. 7 1408

Wells completed 21
Production 13859
Dry 4
Gas 0
Gas production 0

GARFIELD-NOBLE COUNTIES

2-24-1w Gaume, Comar Oil 3-B 230
Blubaugh, Comar Oil 7-A ... 690
3-24-1w Carmichael, Comar Oil 2 27
10-24-1w Evans, Gypsy Oil 18 270
3-24-1w Carmichael, Comar Oil 23 75
36-22-2w Miller, Walters O. & G. 1.... dry
2-24-1w Clark, Gypsy Oil 25 300
5-24-2w Riley, Alcorn Oil 1 ..... dry
2-24-1w Blubaugh, Comar Oil 19-A ... 251
3-24-1w Carmichael, Comar Oil 21 ... 25
10-24-1w Plumb, Humphreys Oil 4 ..... abd
2-24-1w Blubaugh, Comar Oil 16 378
Blubaugh, Comar Oil 20-A 329
3-24-1w Ruzek, Comar Oil 13 42
Ruzek, Comar Oil 21-A 84
Ruzek, Comar Oil 22-A 46
11-24-1w Rence, Healdton Oil & Gas 13 360
19-22-3w Kisner, Sinclair Oil & Gas 17 5
11-22-3w Harmon, Furlow Dev. 1..... abd
6-23-3w Millard, Croxton et al 1 ..... dry
24-22-4w Walker, Sinclair Oil & Gas 23 980
2-24-1w Clark, Gypsy Oil 76 680
School Land, Healdton O. & G. 1 ..... dry
Blubaugh, Comar Oil 16-A ... 528
27-24-1w Pounder, Champlin Ref. Co. 1 dry
2-24-1w Blubaugh, Comar Oil 20 297
Blubaugh, Comar Oil 21-A 355
Blubaugh, Comar Oil 24 264
3-24-1w Ruzek, Comar Oil 19-B 8
Ruzek, Comar Oil 22-A 164
10-24-1w Novotony, Prairie Oil & Gas 6-B ..... dry

Wells completed 31
Production 6378
Dry 8
Gas 0
Gas production 0

CARTER COUNTY

31-2s-2w Dings, Claud Bell 1 75
24-2s-2w Williams, Magnolia Pet. 1... gas
31-2s-2w Johnson, The Texas Co. 4.... 35
25-2s-3w Phillips, Atlantic O. P. 1.... gas
26-2s-3w Fee, C. R. Smith 6 50
25-2s-3w Simpson, Magnolia Pet. 2 430
Lahman, Magnolia Pet. 4 ... gas
Wolfe, Great Southwestern 1.. 100
Jefferson, Wirt Franklin 1... 800
Jefferson, Wirt Franklin 2.... 25
Jefferson, Amster 2 300
15-4s-2w Woodruff, Magnolia Pet. 23.. dry
29-2s-3w Dougherty, Sinclair O. & G. 1 gas
25-2s-3w Jefferson, Amster 1 ..... gas
Jefferson, Amster 3 330

Wells completed 15
Production 2145
Dry 1
Gas 5
Gas production 71,000,000

STEPHENS COUNTY

20-1s-8w Bailey, Magnolia Pet. 4..... dry
Bartley, Champlin & Winkler 11 147
6-2s-4w Striker Doak, Magnolia Pet. 5 7
Striker, Doak, Magnolia Pet. 6 5
20-1s-8w Brittain, Champlin & Winkler 11 ..... gas
33-1s-8w School Land, Magnolia Pet. 15 gas
2-1n-5w Payne, Clark & Cowden 3.... 60
11-1n-5w Darnell, Daisy Belle Oil 1.... dry
5-2s-6w Andrea, Lone Star Gas 3-A... dry
35-1s-7w Tucker, J. C. Cook Oil 1..... dry
20-1s-8w Brittian, Safety First Oil 6 ... 75
Brittian, Old Colony Oil 5..... gas
25-1s-9w Cox, Holmes et al 5 ..... gas
30-1n-8w Funk, Magnolia Pet. 4 350
24-2s-5w Clark, Pure Oil 1 ..... dry
30-1n-5w Payne, Smith et al 1 ..... abd
17-2s-7w Magnolia Pet. 5 ..... abd

Wells completed 17
Production 644
Dry 7
Gas 4
Gas production 33,500,000

MISCELLANEOUS

Southern Oklahoma

Garvin County—
9-1n-3w Gann, Ranger, Magnolia Pet. 2 24
Gann, Magnolia Pet. 5 75
Gann, T. & P. Coal & Oil 2... 215
10-1n-3w Rose, Magnolia Pet. 3 75
Grady County—
14-5n-8w Stephens, Magnolia Pet. 1.... gas
35-5n-8w McCaughery, Little Nick Oil 1 gas
15-5n-7w Harnes, Badgett 1 ..... gas
28-6n-8w Nelson, Hull et al 1 ..... dry
34-6n-7w Graham, John & Graham 1.. dry
18-5n-8w Kennedy et al 1..... abd
4-5n-6w Lewis, Hagerling et al 1 ..... abd
11-4n-8w New Moon Oil 1 ..... abd
Beckham County—
25-8n-22w Vanventor, Kadane et al 1.. gas
6-9n-24w Burkhalter, Pringle 1 ..... dry
Lincoln County—
29-16-6 Fearce, Morgan O. & G. ..... dry
Tillman County—
36-1n-17w School Land, Harmon 1 .... abd
Jefferson County—
24-3s-9w Lenhart, Texas Pacific 1..... dry
Love County—
27-6s-2e Draughn, Union Tool 1 ..... dry
Kiowa County—
33- 6-20w Kiowa Drilling Co. 1..... abd
Caddo County—
5-5-9w Cutshaw, Nils & Christon 2.... dry
24-7-9w Helm, Rucker et al 2 ..... dry

Wells completed 21
production 389
Dry 13
Gas 4
Gas production 44,000,000

OSAGE COUNTY

Rigs

28-28-12 Westland et al 5.
27-22-10 Tidal Osage Oil 16.
26-23-11 Finance Oil 3.
5-21-11 J. E. McKinney 1-A.
7-26-11 New England Oil 1.
10-27-10 Owen-Osage 259.
24-25-11 Phillips Pet. 6.
34-25-11 Devonian Oil 8.
20-29- 9 Winona Oil 3.
30-28-10 American Pipe Line 89.
26-26- 8 Connell Pet. 1.
16-24- 8 Test Log Oil 7.
23-24- 8 Tidal Osage Oil 7.
2-24- 9 P. R. Williams et al 2
26-24- 9 Marland Refining 8.
Tidal Osage et al 3.
17-25- 9 Foster, Davis & Landon 7.
1-22- 9 Atlantic Oil Producing 5-A.
13-23- 8 Peters Oil 29.
31-23- 8 Pennok Oil 1.
10-21- 9 Penn Osage Oil 7.
17-29- 8 Phillips Pet. 5.
4-26- 6 Tidal Osage Oil 10.
6-26 6 Lorraine Oil & Gas 16.
16-26- 6 Producers & Refiners 13.
35-23- 7 Gypsy Oil 10, 11.
1-26- 5 I. D. Simons 7, 13.
25-27- 5 Skelly-Phillips 2, 8.
36-27- 5 Roxana Pet. 4.
20-25- 5 Roxana State Oil 1.

Wells Drilling

8-20-12 Oklahoma Natural Gas 629.
F. A. Gillespie 21.
9-20-12 Oklahoma Natural Gas 630.
27-20-12 Superior Oil 5.
28-20-12 Riverland Co. 2, 3.
Westland et al 4.
32-21-12 Barnsdall Oil 16.
1-22-10 Riverland Co. 1-A.
23-23-10 Gilliland Oil 3.
35-23-10 C. W. Titus 8.
9-22-11 Owen-Osage Oil 256, 258.
19-22-11 Riverland et al 4.
2-23-11 Owen-Osage Oil 260.
27-29-11 J. R. Hadley 2.
34-29-11 I. T. I. 318.
33-25-12 Osage Allegheny 2.
22-26- 9 Peters Pet. 1.
32-24- 8 Mutual Oil 23-B.
33-24- 8 Mutual Oil 8-B.
4-25- 8 Zook & Barnes 1.
29-25- 8 The Texas Co. 2.
27-25- 9 Sim Sitrin et al 21-A.
29-23- 8 Red Band Oil 2.
32-28- 5 Mid-Kansas Oil & Gas 1.

Shut Down

34-22-12 Andes Oil & Gas 1.
2-22-10 Riverland Co. 5.
11-22-10 Gilliland Oil 3, 4.
26-23-10 Rex Pyramid 7.
34-23-10 Waite Phillips 1.
9-22-11 Owen-Osage Oil 251.
28-22-11 Branstetter 1.
17-23-11 Heinerman-Marshall 6.
7-26-10 W. J. Atkins 1.
8-20-10 Mooney, Smith et al 2.
31-20-11 Sand Springs Home 4, 3, 4.
23-21-10 Tidal Osage & Titus 1.
6-21-11 C. W. Titus 3, 4.
31-29-12 Jennings 1.
30-24-11 Homaokla Oil 7.
34-25-11 Devonian Oil 7.
28-24- 8 Osage Oil & Refining 1.
17-24- 9 Number One Oil 6.
25-24- 9 Winona Oil 1.
27-25- 8 Atlantic Oil Producing 3.
29-22- 8 Thompson & Black 1.

8-22- 9 Atlantic Oil Producing 2.
Phillips 2, 3, 5, 6, 7, 9, 10, 11, 12,
4-23- 9 C. B. Peters 11.
28-23- 9 Tidal Osage Oil 1.
20-28- 6 Phillips Pet. 1.
3-26- 6 Kay County Gas 1.
6-26- 6 Tidal Osage Oil 15, 16.
8-26- 6 Cosden Oil & Gas 8.
19-27- 6 Phillips-Skelly 13.
Gypsy Oil 10, 13, 14, 7.
29-27- 6 Phillips-Skelly 8.
31-25- 7 Vickers & Higgens 1.
23-27- 5 Skelly-Phillips 3, 6, 7, 11.
Skelly Oil 2, 3, 5, 6, 7, 8, 13, 14
15, 16.
Phillips 2, 3, 5, 6, 7, 9, 10, 11, 12,
13, 14, 15, 16.
Gypsy Oil 6, 9, 10, 11, 12, 13, 14,
15, 16.
24-27- 5 Phillips-Skelly 9, 10, 11, 12, 14.
Gypsy Oil 13, 14, 16.
26-27- 5 Phillips-Skelly 3, 6, 7, 9, 10, 11, 1,
2, 5, 6, 9, 10, 13, 14.
35-27- 5 Phillips Pet. 6, 7, 12.
Waite Phillips 9, 12.
Rigs, 33; wells drilling, 130; total, 163.

TULSA COUNTY

Rigs

6-19-12 Springs, Sand Springs Home 2.
1-18-12 Edwards, West et al 11.
7-16-12 Miller, Campbell et al 1.
24-16-12 Tiger, Oklahoma Natural Gas 7.
27-16-12 Coleman, Independent Oil & Gas 4.
34-16-12 Barnett, Southern States Oil 1.
17-16-13 Brown, McCullough et al 1.
22-20-10 Unallotted, Jones & Burton 1.
4-17-14 Tucker, Wade et al 1.
3-16-15 Unallotted, O. N. West 2.

Wells Drilling

30-17-14 Depriest, McCullough et al 1.
6-19-12 Bruner, Sand Springs Home 1.
9-18-13 Bruner, Elliott & Son 1.
3-16-12 Whetstone, Pearson Oil & Gas 1-A
22-16-12 Wills, Pulaski Oil 1.
Wills, Sheridan Oil 3, 4.
30-16-13 Tiger, Enfisco Oil 2.
5-19-14 Childer, John Holt 1.
25-19-14 Grant, Webster 2.
33-19-14 Hooks, Pennington et al 1.
4-17-14 Rentie, Lea Drilling 1.
9-17-14 Perryman, Dillard et al 1.
20-17-14 Steel, Noble O. & G. 1.

Shut Down

19-17-13 Coolidge, Pawhuska Oil & Gas 3.
1-18-12 River Bed, Tidal Oil 1-A.
3-18-12 Vance, S. E. Vance 1-A.
13-18-12 Olin Associated P. & R. 6.
Corbray, Smith et al 4.
6-18-13 Sango, Hancock et al 1.
33-18-13 Teague, Houston et al 2.
27-19-11 Gaylord, Minshall Oil 3.
29-19-14 McIntosh, Boyd et al 1.
36-17-14 Secrest, Valley Oil 1.
18-17-15 Wheat, Stone Bluff Syndicate 1.
Rigs, 8; wells drilling, 15; total, 23.

OKMULGEE COUNTY

Rigs

2-15-14 Anderson, Sommerville 6.
18-15-12 Johnson, Robinson et al 2.
22-13-12 McIntosh, Clark et al 8.
24-13-12 Hillman, Roxaline Oil 5.
31-13-12 Unallotted, Havel et al 1.
Unallotted, Waxler & Priesler 2.
16-14-12 Corbray, Knott & Potter 1.
11-11-13 Bruner, Wooster Oil 2.
1-12-12 Monday, Parshall Oil 1.
34-12-12 Wolf, Eagle Picher Oil 4.
Holmes, Eagle Picher Oil 6.
25-12-13 Bird, Kingwood Oil 2.
1-15-11 Cousins, Santonio 2.
9-15-11 Brandt, Indiahoma Oil & Ref. 7.
10-15-11 Cooper, Beggs Oil & Gas 13.
11-15-11 Adams, Cosden Oil & Gas 3.
14-15-11 Richards, Waite Phillips 3.
32-15-11 Gooden, Meisner 2.
14-13-11 Thompson, Ohiokla Oil 1.
Thompson, Waite Phillips 1.
29-13-11 Hawkins, Kinbley Oil & Ref. 4.
36-13-11 Turner, Gladys Belle Oil & Sands 6.
17-13-15 Atkins, Purdy & Rebold 1.
8-14-14 Harris, Ohiokla Oil 1.
23-14-14 Corbray, Argue & Brockway 6.

Wells Drilling

31-15-14 Charles, Wallace et al 3.
8-13-12 Morton, Logan & Wallace 4.
3-14-12 Norris, Sands et al 4.
5-11-12 Hawkins, Grundish et al 3.
24-11-13 Wills, C. L. McMahon 1.
6-12-12 Davis, L. F. McCrae 1.
Mitchell, Gladys Belle & Independent 3.
18-12-13 Burgess, Smith & Jilson 2.
1-15-11 Grayson, Transcontinental Oil 6.
17-15-11 Carolina, Cole et al 1.
23-15-11 Hill, Frank Moore et al 2.
28-15-11 Johnson, Sheridan Oil 1.
33-15-11 McIntosh, Sheldton Oil 2.
26-13-11 Murrell, E. R. Black 2.
28-13-11 Richardson, Dickenson 1.
30-13-15 Denby & Briscoe, Campbell 1.
32-14-14 Perryman, Archer Bros. et al.
27-14-15 Jefferson, Hazlett 1.

Shut Down

13-15-12 Minugh, Huckins & Wilson 1.
22-15-12 Sheppard, Sheridan Oil 1.
33-15-12 Jackson, Southwestern Pet. 2.
36-15-13 Sampson, Southwest Oil Field 5.
9-13-12 Marshall, Crescent Oil 2.
31-13-13 Holleman, E. F. Alden 1.
19-14-13 Berryhill, Kessler 1.
18-11-12 Fish, Wiser Oil 1.
36-11-12 King, Haun 1.
11-11-13 Bruner, King et al 1.
Thompson, Simplex Oil 1.
1-12-12 Monday, Parshall Oil 1.
27-12-12 Wolfe, Vanderwide et al 1.
15-12-13 Bruner, Diamond Oil 10.
24-13-14 Thornberry, Iron Mountain 5.
25-13-14 W. E. Reynolds 1.
29-13-14 Wiley, Frank Havel 2-A.
22-15-11 Richards, LeBein et al 7.
23-15-11 Hill, Jennings Brothers 2.
30-13-11 Cross, Cosden Oil & Gas 5.
31-13-11 Holatha, Denver P. & R. 7..
32-13-11 Thomas, Ohiokla Oil 1, 2.
16-14-14 Colvert, Hutchinson 1.
35-14-14 Anderson, Wooster Oil 3.
36-14-14 Smith, Enterprise Oil 5.
19-14-15 Rentie, Ohiokla Oil et al 3.
29-14-15 Carter, Bohn et al 2.
32-14-15 Carter, Bandy et al 2.
Rigs, 25; wells drilling, 46; total, 71.

OKFUSKEE, HUGHES, SEMINOLE AND McINTOSH COUNTIES

Rigs

27-11-15 Ireland, H. & H. Oil 5.
22-11-11 Holmes, Deaner & Jamison 6.
35-11-11 Barnett, Atlantic Oil Producing 2.
34-11-11 Barnett, Calvin et al 1.
22-12-11 Jacobs, Martin et al 1.
27-12-11 Holmes, Hartman 3.
6-10-10 Unallotted, Prairie Oil & Gas 1.
29-10-11 Cubbee, Fisher & Umbree 1.
30-11-10 Grayson, Independent Oil & Gas 1
3-13- 8 Kinyer, Wilcox & Oswalt 1.
27-11- 8 Sands, Burke-Gries 1.
4- 9- 9 Alexander, Papoose Oil 1.
3- 9- 9 Davis, Kingwood Oil 1.
9- 9- 9 Simon, Gilcrease Oil 1.
Hill, Papoose Oil 1.
21- 9- 9 Brusser, Prairie Oil & Gas 1.
15-10- 8 Willis, Cosden Oil & Gas 1.
5- 7- 8 Foster, W. H. Thurbier 1.
28- 8- 8 Foster, Amster Oil 1.
Foster, Dixie Oil 2.
32- 8- 8 Long, Dixie Oil 1-B.
Long, Dixie Oil 4-A.
Long, Dixie Oil 5-A.
Walker, Dixie Oil 1.
Harris, Dixie Oil 2.
33- 8- 8 Sango, Champlin et al 1.
Foster, Dixie Oil 3-B.
Parker, Magnolia Pet. 3.
4- 5-11 McLain, Skelly Oil 1.

Wells Drilling

16-12-17 Keys, Welble 1.
17-11-14 Cumberledge, Wooster Oil 4.
20-12-14 Tucker, Casper et al 1.
Hawkins, Jordan & Ashley 1.
8- 9-12 Smith, Flesher Pet. 1.
36-10-12 Unallotted, Carter Oil 1.
8-11-11 Summers, Moffett et al 2.
12-11-11 Fish, Wooster Oil 2.
13-11-11 Barnett, Waite Phillips 6.
15-11-11 Tucker, Deaner & Edgar 1.
36-12-10 Brooks, Blakely et al 1.
1-12-11 Thompson, Burton et al 3.
13-12-11 Sugar, North Baltimore 5.
22-12-11 Barnett, Hartman et al 6.
27-12-11 Holmes, Hartman 2.
29-12-11 Stubblefield, Anglo-Texas 1.
11-10-11 Hill, Transcontinental Oil 1.
4-13- 8 Saryokiche, Iron Mountain 1.
Saryokiche, Link Oil 1.
2-13- 9 Chessoe, Lippa & LaBosquet 1.
1-11- 8 Fields, Howarth et al 1.
30-11- 8 Unallotted, Foster 1.
26-12- 8 Beaver, Howarth Oil 1.
25-12- 9 Callahan, Wangerine 1.
35- 5-11 Rogers, Kimbley O. & R. 1.
7- 7-10 Barnett, Kingwood Oil 1.
23- 8-10 Alexander, Independent O. & G. 1.
3- 6-11 Middle States Oil 1.
15- 9- 8 Ahaise, Independent Oil & Gas 1.
28- 9- 8 Davis, Waite Phillips & Wilcox 1.
4- 7- 8 Long, Lewis Oil 1.
6- 7- 8 Dindy, W., R. Ramsey 1.
19- 8- 8 Townsite, Shawnee-Wewoka O. & R. 1.
21- 8- 8 Bowlegs, Magnolia Pet. 1.
28- 8- 8 Foster, Dixie Oil 1.
31- 8- 8 Willis, H. C. Stagger 1.
32- 8- 8 Foster, Dixie Oil 3, 4.
Long, Dixie Oil 3-A.
Harris, Dixie Oil 1.
Long, Producers & Refiners 2.
Long, Independent Oil & Gas 2, 3.
33- 8- 8 Foster, Dixie Oil 1.
Parker, Magnolia Pet. 2.
Foster, Producers & Refiners 6.
Long, Dixie Oil 1.
34- 9- 6 Jones, Taylor 1.
13- 9- 7 Williams, Davis & Malcona 1.
23- 7- 7 Carolina, R. H. Smith 1.
25- 8- 7 Rosanna, Dixie Oil 1.
14- 6- 7 Caroline, Link Oil 1.
20- 6- 7 Daisy Belle, Maxwell & Kawfield 1.

Shut Down

2-12-16 Vornblood, Montague Oil 1.
30-12-14 Anderson, Alsen Drilling 2.
2-12-15 Bray, Beggs Oil & Gas 1.
29-12-15 McNally, Clifton & Terrell 1.
4-11-11 Morrow, Anglo-Texas 1.
32-11-11 Holmes, Burke-Gries 1.
30-12-10 Hariack, Blakeley et al 1.
3-12-11 Grayson, Parshall Oil 2.
32- 9-10 King, Vierson et al 2.
4- 9-11 Baker, Tidal Osage Oil 1.
9- 9-11 Bruner, Mid-Kansas Oil & Gas 2.
9-10-10 Lindsay, Gilcrease Oil 1.
11-10-11 Hill, Transcontinental Oil 1.
4-13- 8 Colbert, Skelly Oil 1.
9-13- 8 Riley, Gypsy Oil 1.
18-11- 9 Holatha, Link Oil Co. 1.
4- 5-11 E. J. Mathews 1.
35- 5-11 Kimbley et al 1.
12-10- 9 Foster, Independent Oil & Gas 1.
33-10- 9 Barnett, Midwest & Gulf 1.
19- 8- 8 Townsite, Ramsey 1.
28- 8- 8 Foster, Crosbie et al 1.
33- 8- 8 Foster, Producers & Refiners 4.
13- 7- 7 Dean, Ramsey 1.
10- 8- 7 Davis, Ossenbeck et al 1.
25- 6- 6 Ming, Maxwell & Kawfield 1.
33- 6- 6 Charty, Harvey & Maxwell 1.
14- 6- 7 Carolina, Link Oil 1.
Rigs, 29; wells drilling, 81; total, 110.

MUSKOGEE-WAGONER COUNTIES

Rigs

20-13-16 Willingham, Fgolf Oil 1.
6-15-15 Jefferson, Gilliland Oil 2.

Wells Drilling

5-15-15 Hawkins, Cook & George 2.
6-15-15 Jefferson, Gilliland Oil 1.
14-13-15 McNac, Biggs & Evans 2.
27-14-15 Jefferson, Hazlett 1.

Shut Down

6-13-16 Callahan, Jack McCutcheon 2.
36-13-17 Arnett, Douglas & Haller 1.
24-14-16 Tipton, Roxaline Pet. 3.
35-14-16 Luster, J. A. DeWitte 1.
18-14-17 James, W. A. Peterson 5.
27-14-17 Dean, Foits 1.
32-14-17 Buffington, E. C. Lantz 1.
4-15-15 McDaniels, Harsha 1, 2.
27-15-15 Charles, Turin Oil 4.
29-15-15 Vandeventer, Bradley et al 4.
28-13-15 Fulton, J. M. Bynum 1.
25-14-15 Walker, Armstrong 3.
34-14-15 Durant, Henson et al 1.
Rigs, 2; wells drilling, 18; total, 20.

CREEK COUNTY

Rigs

16-14-10 Bear, Donnelly et al 2.
33-17-11 Pickett, Allen & McGilpin 1-A.
32-16-10 Bemore, Phillips Pet. 3.
12-16-11 Gilgray, Shaffer Oil & Refining 1.
15-19- 9 Manley, Shaffer Oil & Refining 1.
31-19- 9 Gambler, Asa Bailey 1.
7-17- 8 Island, Flesher Pet. 1.
30-17- 9 Galvez Oil 2.
Amerada Pet. 1.
31-17- 9 Marshall, Prairie Oil & Gas 2.
27-18- 8 Wolfe Oil 1.
29-18- 9 Scales, Peters et al 2.
2-15- 8 Alex, Roland Oil 4.
9-15- 8 Beaver, Skelly Oil 5.
30-15- 8 Phillips Pet. 1.
9-15- 9 Tiger, J. R. Bond 4.
16-16- 8 Meyers, Skelly Oil 2.
23-16- 8 Lorraine Pet. 11.
3-16- 9 Damat, Clark et al 1.
10-16- 9 Field, Wolfe Oil 2.
16-16- 9 Barnes, Carter Oil 4.
McNac, Roxana Pet. 4.
20-16- 9 Barnett, Dickenson et al 1.
35-16- 9 Harner, U. S. Cities Oil 2.
24-14- 8 Doyle, Kaufman & Lewis 1.
26-14- 8 Johnson, Tibbons 6.
26-19- 7 Bruner, Lyons Pet. 1.

Wells Drilling

23-15-10 McIntosh, Argue & Compton 5.
28-15-10 Harry, Mt. Fork Oil 1.
29-15-10 McIntosh, Carter Oil & Davis 1.
32-15-10 Ansiel, Wilcox Oil & Gas 4.
34-15-10 Sewell, Sapulpa Refining 2.
31-14-10 Barnett, Independent Oil & Gas 1.
14-17- 8 Freeman, Transcontinental Oil 1.
24-17- 8 Green, Lima Oil & Gas 1.
27-17- 8 Venci, Waite Phillips 1.
32-17- 8 Alex. Sartain Bros. 2.
19-17- 9 Wright, Fure Oil 1.
8-15- 8 Robertson, Hiram Oil & Gas 6.
9-15- 8 Beaver, F. A. Chapman 1, 2
15-15- 8 Warnocke, Shaffer Oil & Ref. 2.
Warnocke, Cosden Oil & Gas 1.
Watson, Cosden Oil & Gas 1.
21-15- 8 Marshall, Tibbons 1.
35-15- 8 Hill, Tibbons 1.
5-15- 9 Colbert, McCree Pet. 1.
9-16- 8 Meyers, Red Bank Oil 6.
14-16- 8 Canada, Phillips Pet. 5.
21-16- 8 H. C. Wilson 1.
Major, Tidal Osage 2.
22-16- 8 Knoll, Laurel Oil & Gas 4.
Peters Oil 2.
24-16- 8 Richards, Belmont Oil 2.
25-16- 8 Buckner, Malcona Pet. 1.
32-16- 8 McKinney, Prairie Oil & Gas 1.
34-18- 8 Harjo, Wilcox Oil & Gas 8.
21-16- 9 Hendrickson, Nowata Oil & Ref. 3.
34-16- 9 Barnett, Clay et al 2.
14-14- 8 Bearhead, Prairie Oil & Gas 1.
30-14- 8 Kirnal, Prairie Oil & Gas 3, 4.
Kirnal, Waite Phillips 1.
2-19- 7 Sarty, McCray et al 1.
36-18- 7 Jones, Magnolia Pet. 1, 3.
4-16-10 Tiger, Hartman et al 1.
7-19- 8 Griffith, Malcona Pet. 1.
30-19- 9 Jefferson, Sapulpa Refining 3.

Shut Down

9-15-10 Grayson, Kawfield Oil 8.
34-15-10 Sewell, Cosden Oil & Gas 1.
14-19- 8 Lewis, Kiskadden & Crane 1.
26-19- 8 Foster, Kiskadden et al 1.
15-19- 9 Postoak, Shaffer Oil & Refining 4.
Postoak, Howarth Oil & Gas 2.
30-19- 9 Jefferson, Sapulpa Refining & Nailey 2.
22-17- 8 Mitchell, Transcontinental Oil 1.
32-17- 8 Oklahoma Producers & Refiners 1.
33-17- 8 Hawkins, Wilcox Oil & Gas 1.
6-17- 9 Not Mapped, Malcona Pet. 1.
32-17- 9 Tiger, Neilson et al 1.
23-18- 8 Goyer, Sidwell Drilling 1.
35-18- 8 J. F. Quinn 1.
17-18- 9 Scales, Peters et al 1.
19-18- 9 Washington, Bartlett et al.
14-15- 8 Gooden, Damar Oil 1.
21-15- 8 Wilson, Schermerhorn et al 1.
23-15- 8 Peters, Bu-Vi-Bar Pet. 1.
23-16- 8 D. E. Mason 3.
29-16- 8 Fixico, Atlantic Oil Producing 1.
34-16- 8 Larnie, Mortland Oil 1.
9-16- 9 H. H. Carruthers et al 1.
16-16- 9 Fee, T. B. Slick 9.
Moore et al 2.
17-16- 9 Jackson & Wise 1.
21-16- 9 Jacobs, Emery & Sons 4.
29-16- 9 Hamilton, Kirven et al 2, 4.
36-16- 9 Charles, Jomac Oil 2.
9-14- 8 Ahlequah, Cohan et al 1.
12-14- 8 Bruner, Tibbons 1.
27-14- 8 McIntosh, Billingslea et al 5.
30-14- 8 Jackson, Roxana Pet. 2.
35-14- 8 Beaver, Independent Oil & Gas 6.
Rigs, 27; wells drilling, 77; total, 104.

PAWNEE COUNTY

Rigs

24-20- 8 First National Bank, S. W. Oil Fields 6.
8-21- 6 Calclasier, Amerada Pet. 1.
Simmons, Wood & Farren 1.
5-23-5e Phillips, Mosier et al 2.

Wells Drilling

8-21- 6 Calclasier, Amerada Pet. 1.
17-21- 6 Phillips, Cosden Oil & Gas 1.
15-19- 6 Twin State Oil 1.
16-20- 6 School Land, Magnolia Pet. 4, 6, 1.
17-20- 6 Travesdale, Carter Oil 2.
36-23-4e Willard, Cosden Oil & Gas 1.
15-22-5e Prairie Oil & Gas 1.
7-23-5e Donahue et al 1.
32-23-3e Robedeaux, Magnolia Pet. 2, 3.
33-23-3e Brown, Watchorn Oil & Gas 1.
Miller, Watchorn Oil & Gas 5, 6.
2-20-23 Colorado Oil & Gas 1.

Shut Down

24-20- 8 Hamilton, Tidal Osage Oil 10.
32-20- 8 Parker, Burton & Breslyn 1.
27-20- 9 Unallotted, Holmes et al 1.
25-22- 8 Belle, Victor Oil 1.
35-22- 6 Burke-Gries 1.
28-20- 7 Alleman, Fugate & Clifford 3.
8-21- 6 Catelasser, Duquesne Oil 1.
8-21- 7 Kinsley, Freeman 1.
20-21- 7 Priestly & Waxler 1.
21-21- 7 Hussey, Flight et al.
25-21- 7 Herringford, McNemire & West 3.
27-21- 7 Daniels et al 1.
5-23-5e Phillips, Columbine Oil 1.
16-19- 6 School Land, Cosden Oil & Gas 2.
16-20- 6 School Land, Stone et al 2.
17-20- 6 Adkinson, Davis et al 1.
33-23-3e Robedeaux, Watchorn Oil & Gas 2.
12-21-3e Sayre, Ossenbeck et al 1.
31-21-3e Christie, Colorado Oil & Gas 1.
Rigs, 4; wells drilling, 35; total, 39.

PAYNE COUNTY

Rigs

34-19- 4 Saunders, Twin State Oil 1.

Wells Drilling

26-18- 5 Parker, Magnolia Pet. 1.
34-19- 4 Main, Magnolia Pet. 9.
12-17- 4 Willis, Oil & Gas 1.
30-18- 6 Hunter, Home Gas 1.
21-18- 4 R. C. Jones 1.
9-18- 3 Dan Bunnel, Jr. 1.
21-19-1w Ponca City Oil & Gas 1.
15-19- 6 Ridsinger, Twin State 1.
16-19- 6 Clawsen, Cosden Oil & Gas 1.

Shut Down

33-19- 4 Ballard, Magnolia Pet. 5.
30-18- 5 Cochran, Cassiday et al 6.
Cochran, Amerada Pet. 3.
28-17- 3 Plateau Oil 1.
4-19- 5 Gypsy Oil 1.
2-18- 5 Josey Oil Co. 1, 2.
Rigs, 1; wells drilling, 16; total, 17.

KAY COUNTY

Rigs

3-27- 5 Carter Oil 1.
4-27- 5 Roxana Petroleum 2.
9-27- 5 Phillips Petroleum 3.
Phillips Petroleum 7, 8, 9.
Prairie Oil & Gas 1, 2.
Waite Phillips 2.
10-27- 5 Gypsy Oil 2.
Comar Oil 4.
Phillips-Delmar 4, 5.
Carter Oil 4.
15-27- 5 Mid-Kansas Oil & Gas 13, 14, 15, 16.
16-27- 5 Pure Oil 4.
22-27- 5 Skelly-Phillips 5.
Gypsy Oil 8.
23-29-3e Brown, Johnson & Scott 1.
14-26-1w McClaskey, Ostot Dev. 1.
8-27-1w Jakley, Globe Refining 1.
10-27-1w Crouch, Blackwell Oil & Gas 1.
Jones, Prairie Oil & Gas 2.
Carmichael, Hess & Kinard 1.
35-25-1w Ogg, Comar Oil 8, 9, 13.

Wells Drilling

36-29-4e Taylor, Gladys Belle Oil 1.
33-29-5e Bellmard, Galvez Oil 1.
8-28-2e Cardon, Mid-Kansas Oil & Gas 1.
14-26-2e Bell, Waite Phillips 1.
31-27-2e Garrett, Comar Oil 1.
18-25-2e Four Eyes, Marland Refining 1.
20-25-2e Miller Brothers, Marland Ref. 1.
31-25-2e Ranch, Marland Refining 1.
12-24-3e Roya, The Texas Co. 1.
7-26-1e Goodson, Southwestern Pet. 1.
24-26-1w Miles, Alcorn Oil 1.
15-27-1w Show, Ostot & Poling 1.
Johnson, Ostot et al 2.
16-27-1w Langbery, National Union 1.
Slocum, Manahan et al 2.
Slocum, Anoliu Oil 2.
27-25-1w Knostman, The Texas Co. 1.
33-25-1w Russell, Marland-Cosden 1-A.
33-25-1w Woods, Marland-Cosden 4.
34-25-1w Endicott, Comar Oil 3-C, 9, 9-A, 12, 17, 18-A, 21-A, 22-A.
Endicott, Pennok Oil 6-B.
McDaniels, Blackwell Oil & Gas T-B.
12-26-2w Hubbard, Alcorn Oil 1.
9-26-2w Chambers, Besdor Oil 1.
27-25-2w Simmons, W. E. Brown 1.

Shut Down

10-27- 5 Phillips-Delmar 1.
15-27- 5 Danciger Oil & Gas 6, 7, 8.
Twin State Oil 6, 7, 8, 9, 10.
Comar Oil 3, 5, 7, 8.
Mid-Kansas Oil & Gas 5, 7, 9, 11.
16-27- 5 Skelly & Phillips 2, 3.
Phillips Pet. 1.
Pure Oil 3.
22-27- 5 Skelly-Phillips 5, 6, 10.
Gypsy Oil 2, 3, 5, 6, 7, 9, 11.
Carter Oil 5, 6, 8, 9, 16, 13, 14, 15, 16.
32-29-5e Bellmard, McCray et al 1.
11-28-1e Lowery, Brown & Woods 1.
15-28-1e Trenary, Grand Island Oil & Gas 1.
3-27-1w Rohrs, Ostot Dev. 2.
32-27-1w Elledge, Amerada Pet. 1.
29-24-1w Robinson, Tulhoma Oil 15.
27-25-1w Suiter, McMan Oil 4.
30-25-1w Frazier, Bailey & Thompson 1.
33-25-1w Russell, Marland-Cosden 3-A.
34-25-1w McKee, McCaskey & Wentz 41, 42, 43, 44.
35-25-1w Endicott, Comar Oil 4.
Ogg, Comar Oil 3.
26-28-2w Armstrong, Fleming & Lewis 1.
23-29-2w-Elwell, Guyler & Daniels 1.
8-26-2w-Smith, Day Oil 1.
36-25-2e Davis, Emery & Leeright 1.
Rigs, 30; wells drilling, 91; total, 121.

GARFIELD-NOBLE COUNTIES

Rigs

11-21-4w Boepple, Boepple et al 2.
2-24-1w Gaume, Comar Oil 6, 8-B, 9-A, 9-B, 11-A, 11-B, 12-A, 12-B, 13, 13-A, 14, 14-A, 15.
Blubaugh, Comar Oil 15-A, 17-A, 22, 22-A, 23, 23-A, C-1-B, C-3-A, C-4, C-4-A, C-5-A, C-7, C-7-A, C-8, C-8-A.
9-24-1w Gravel, Herron 1.
11-24-1w Rence, Healdton Oil & Gas 14-A.
16-24-1w School Land, Marland-Cosden 7, 8.
3-23-1w Cooper, Faller, et al 1.
21-23-1w Forman, Walters Oil & Gas 1.
25-23-1w Burnside, Jankowsky et al 1.
7-21-3w Kettner, Chaffee Oil & Gas 1.
36-23-5w Blazier, Martin, Fleming et al 1.

Drilling Wells

14-24-2e Kempie, Ossenbeck et al 1.
6-22-2e Miller, Miller-Wrightsman 1.
2-24-1w Clark, Gypsy Oil 64, 74, 77.
Gaume, Comar Oil 11, 16.
Blubaugh, Comar Oil 7-B, 10, 21.
3-24-1w Ruzek, Comar Oil 7-A, 13-A, 6-A, 9-A, 19-A, 24, 24-A.
10-24-1w Evans, Gypsy Oil 22.
Novotony, Prairie Oil & Gas 6, 7, 7-B.
11-24-1w Rence, Healdton Oil & Gas 8-B, 8-A, 8-B, 12-A.
Oliver, Comar Oil 1-A.
15-24-1w See, Comar Oil 7-A, 15.

16-24-1w School Land, Mariand-Cosden 1.
22-20-1e Boyle, Nelson & Hayden 1.
14-20-1w Kohr, Walters Oil & Gas 1.
20-21-1w Boyce, Perry Service Oil 1.
21-21-1w McNeeley, Snowden & McSweeney 1.
17-22-2w Murphy, Prairie Oil & Gas 1.
15-22-3w Baldwin, Champlin et al 1.
3-22-5w Wengert, Martin, Fleming 1.
25-20-4w McCullough, Danciger Oil 1
19-20-5w Ray, Summers Oil & Gas 1
22-21-4w Miller, Alcorn Oil 1
7-20-6w Senrand, Jens-Marie 1
2-21-7w Montgomery, Margay Oil 1
Shut Down
20-24-2e LeClair, Ossenbeck et al 1
2-24-1w Clark, Gypsy Oil 59, 60, 61, 62, 68, 70, 71, 72, 73.
Blubaugh, Comar Oil 8-B, 12-B, 15, 17.
3-24-1w Ruzek, Comar Oil 7-B, 8-B, 9-B, 13-B, 15-B, 22.
10-24-1w Novotony, White Eagle Oil & Refining 9.
11-24-1w Rence, Healdton Oil & Gas 11-A, 12.
20-24-1w Read, Eureka Oil & Gas 1.
21-24-1w Burch, Champlin et al 1.
29-24-1w Robinson, Tuthoma Oil 15.
1-22-2w White, Kelly et al 1.
9-21-3w Kring, Rabbit Foot 2.
12-22-4w Stine, Hopper et al 2.
25-22-4w-Hotson, Empire Gas & Fuel 19.
20-22-4w Cruce, Hollingworth et al 1.
13-20-4w Tammell, Summers Oil & Gas 1.
31-21-5w Champlin, Summers Oil & Gas 1.
6-23-6w Hess, Weir-Wood 1.
9-23-5w Cope, Zinc & Barnes 1.
24-22-4w Belveal, Sinclair Oil & Gas 24.
25-22-4w Windler, Sinclair Oil & Gas. 9.
25-22-4w Hays, Sinclair Oil & Gas. 18.
19-22-3w Keener, Sinclair Oil & Gas 17.
31-22-3w Morrison, Sinclair Oil & Gas 6.
Rigs, 39; wells drilling, 81; total, 120.

CARTER COUNTY

Rigs

19-1s-3w Hardin, Magnolia Pet. 1.
30-2s-2w Dings, Skelly Oil 3.
31-2s-2w Bennett, Magnolia Pet. 4.
25-2s-3w Adams, Neustadt 1.
26-2s-3w Fee, C. R. Smith 7.
35-2s-3w Brooks, Rockland Oil 10.
5-3s-2w Cobb, Atlantic Oil Producing 2.
Fee, Wirt Franklin 1.
15-4s-2w Woodruff, Magnolia Pet. 25, 26-A
Wells Drilling
17-5s-1e Johnson, Magnolia Pet. 1.
20-5s-1e Baptiste, Amerada Petroleum 19.
24-5s-1e Butler, Amerada Pet. 1.
24-1s-3w Howard, Humble Oil & Ref. 1.
30-2s-2w Sparks, Cameron Refining 5.
Rickett, Schermerhorn 2.
Dings, Skelly Oil 2.
Carr, Magnolia Pet. 1.
Sparks, Cotton Belt Pet. 3.
Ellis, Cotton Belt Pet. 5.
31-2s-2w Dings, Merrick et al 2, 4.
Palmer, Patsy Oil 8.
Johnson, The Texas Co. 3.
32-2s-2w Meyers, Healdton Oil & Gas 1.
Palmer, Schermerhorn 4.
Rogers, Magnolia Pet. 1.
25-1s-3w Jenkins, Humble Oil & Refining 1.
2-2s-3w Lyles, Barber et al 1.
13-2s-3w Pierce, Pringle et al 1.
14-2s-3w Lyles, Humble Oil & Refining 1.
22-2s-3w Carpenter, Humble & Refining 1.
24-2s-3w Williams, Magnolia Pet. 2, 3.
25-2s-3w Simpson, Skelly Oil 1.
Wolfe, Great Southwestern 5.
Tucker, Magnolia Pet. 1, 3, 4.
Stanton, Atlantic Oil Producing 1.
Holman, Schermerhorn 1.
Jefferson, Twin State Oil 1, 2.
Jefferson, Atlantic Oil Prod. 1.
Jefferson, Wirt Franklin 3.
Jefferson, Amster Oil 3.
Hinkle, Amster Oil 1, 2.
26-2s-3w Swartz, Magnolia Pet. 2.
27-2s-3w Johnson, Paige Oil 4.
35-2s-3w Brooks, Rockland Oil 6, 9.
Frazier, Healdton Oil & Gas 1.
5-3s-2w Roland, Schermerhorn 1, 2.
Cobb, Merrick et al 1, 2.
6-3s-2w Fee, Smith et al 1.
Palmer, Patsy Oil 1, 6, 7.
7-3s-2w Heskett, Woodruff 1.
9-4s-2w Lowery, Sure Oil 2.
10-4s-2w Dillard, Carter Oil 2.
15-4s-2w Woodruff, Carter Oil 33.
16-4s-2w Ward, Carter Oil 19.
21-4s-2w Noble, Carter Oil 39, 40, 41.
Gorton, Magnolia Pet. 1.
Noble, Skelly Oil 10.
Noble, Fitzgerald 7.
22-4s-2w Carr, Magnolia Pet. 10, 11, 12, 13.
11-4s-3w Davis, Holliday 1.
Shut Down
16-4s-1e Bishop, Ed Felmlee 1.
20-5s-1e Baptiste, Amerada Pet. 18, 2.
Farre, Amerada Pet. 10.
19-2s-2w Brooks, Empire Gas & Fuel 1.
30-2s-2w Sparks, Schermerhorn 3, 4, 5.
Sparks, Humble Oil & Refining 1.
Sparks, Cotton Belt Pet. 4.
Ellis, Cotton Belt Pet. 3.
31-2s-2w Holmes, Kirk Oil & Gas 10.
Fowler, Merrick et al 1.
Burrow, Healdton Oil & Gas 3, 4.
Meyers, Healdton Oil & Gas 2.
Bennett, Magnolia Pet. 6, 10.
Bennett, Merrick et al 10, 11.
Sheppard, Abe Kaufman 1.
23-2s-3w Laymen, Magnolia Pet. 2.
24-2s-3w Williams, Magnolia Pet. 4.
Holden, Wirt Franklin 1, 2.
Adams, Cameron Refining 1.
Abernathy, Schermerhorn 3.
25-2s-3w Fee, Westheimer & Daube 1.
Laymen, Atlantic Oil Producing 2.
Taylor, Magnolia Pet. 3.
27-2s-3w Fee, C. R. Smith 5.
McClure, Paige Oil 4.
5-3s-2w Curse, Schermerhorn 1.
Cobb, Atlantic Oil Producing 1.
8-3s-2w Harrison, Noble et al 1.
9-4s-2w Simpson et al 1.
Walker, Sure Oil 11.
Walker, Humble Oil & Refining 11, 14.
10-4s-2w Rexroat, Cotton Belt Pet. 4-C.
15-4s-2w Woodruff, Carter Oil 9.
Martin, Sure Oil 7.
16-4s-2w Westheimer, Amster Oil 9.
Ward, Southerland Oil 7.
Gazaway, Humble Oil & Ref. 9
21-4s-2w Noble, Carter Oil 42.
22-4s-2w Dillard, Skelly Oil 15-A.
Dillard, Humble Oil & Refining 8, 9.
Fee, Baker & Strawn 4-A.
13-5s-3w Beal, Wickenhiser & Rose 1.
27-3s-2e Brown, Home Oil 2.
Rigs, 10; wells drilling, 119; total, 129.

STEPHENS AND COTTON COUNTIES

Rigs

33-1s-8w Ramsey, Magnolia Pet. 16.
Wells Drilling
3-1n-4w Graham, T. & P. Coal & Oil 1.
19-1n-5w Payne, Gant et al 1.
28-2s-4w Sullivan, Cameron-Gant 1.
25-1n-6w Barnes, Magnolia Pet. 1.
2-2s-6w Saunders, Magnolia Pet. 1.
17-2s-6w McBee, J. C. Cook Oil & Gas 1.
26-2s-6w Chandler, Magnolia Pet. 3.
4-3s-6w Peck, Magnolia Pet. 1.
22-3s-6w Fillmore, Gant et al 1.
23-3s-7w Empire Gas & Fuel 1.
30-1n-8w Fink, Carter Oil 5.
Maxey, Gypsy Oil 6.
14-1n-9w Atkin, Walton et al 2.
23-1n-9w Fleming, Preddy et al 1.
5-1s-8w Ballard, Choctaw Oil 3.
20-1s-8w Bartley, Magnolia Pet. 8.
30-1s-8w Clarkson, Lone Star Gas 1.
14- 2-5w Greitt, Harper et al 1.
29-4s-10w Barber, Amerada Pet. 1.
29-2S-10w Butler, Malerney et al 1.
Shut Down
11-1n-5w Sampson, Kilgore Oil 4.
14-1n-9w Atkin, Glenhoma Oil 1.
2-2n-5w Rigdon, Sappington et al 1.
36-4S-11 West, McBain Oil 1.
Rigs, 1; wells drilling, 24; total, 25.

MISCELLANEOUS

Rigs

Coal County—
1-11-11 Nichols, G. E. Vaughn 1.
18-2n- 9 Hicks, Bassie Oil 1.
16- 2-10 Downard, Vaughn et al 1.
Comanche County—
33- 2-9w School Land, A. G. Samuels 1.
Texas County—
4- 1-12 Allison, Home Dev. Co. 2.
Roger Mills County—
10-16-21w Seaba, Kellogg et al 1.
3-13-21w Fields, Texas Oil Dev. 1.
Pottawatomie County—
19- 7- 4 Neglinguet, Pierce Oil et al 1.
Beckham County—
20- 9-23w Harrison, Kinard et al 1.
32- 9-23w Unknown, Foster & Santrock 1.
Caddo County—
26- 6-10w Garner, Schutz & Schinn 1.
3- 5- 9w Terry, Magnolia Pet. 1.
McClain County—
31- 5-4w Gooch, Hall & Bristow 1.
Pontotoc County—
19- 5- 7 Donner, Howarth O. & G. 1.
28- 4- 7 Potter, Hughes et al 1.
Grady County—
2- 4-8w Wood, Nichols Drilling 1.
11- 6-8w Holloway, Nichols Drilling 1.
Lincoln County—
6-15 6 Earp, Independent O. & G. 1.
Logan County—
28-15-1w Ganouch, Lambert et al 1.
Garvin County—
2- 4-3w Bell, Donaldson 1.
13-1n-3w Newberry, Pauls Valley Oil 1.
16-1n-3w Mauldin, Magnolia Pet. 1.
Wells Drilling and Shut Down
(Shut Down Wells Indicated by *)
Greer County—
23- 7-22w D'Armond, Western Nat. Gas 1.
Grant County—
27-27-3w Lane, Western States 1.
3-26-6w McKennan, Wrightsman 1.
20-26-4w Edwards, Emery & Leright 1*.
22-27-3w Stewart, Western States 4.
26-27-3w Snouffler, Associated P. & R. 3*.
22-25-4w Volmer, Myers O. & G. 1*.
19-25-4w Reynolds, Hutchinson et al 1.
23-29-3w Hoffman, Cassie Oil 1*.
7-28-3w Nelson, Mariand Ref. 1.
14-27-3w Howell, Western States 1.
8-27-8w Moon, Midwest & Gulf 1.
25-27-7w Sheppard, Walters O. & G. 1*.
26-27-3w Snouffler, Blackwell O. & G. 1.
8-26-5w Bonham, Jarvis et al 1.
11-25-7w Kuykendall, Walters O. & G. 1.
14-25-5w Midgley, Myers O. & G. 1*.
Woodward County—
34-20-20w Unknown, Beard et al 1*.
Woods County—
19-24-14w Whitney, McCray et al 1*.
Logan County—
36-15-2w Baker, Oklahoma Drilling 1*.
32-19-3w Newman, Burford & Brim 1*.
9-18-2w Wyatt, Mulhall Oil 1*.
28-18-4w Moor, Franklin Oil 1.
Lincoln County—
1-14- 6 Zollers, Roxana Pet. 1.
11-14- 6 Jackson, Roxana & Wolverine 1.
12-14- 6 Unknown, J. A. Hull 1.
28-17- 3 Unknown, Plato Oil 1.
28-17- 5 Willison, Pure & Magnolia 1.
2-13- 6 Unallotted, H. F. Wilcox 1.
22-16- 3 Hazlett, Tryor & Dellaire 1.
10-16- 5 Wyman, Mascho et al 1.
16-16- 4 School Land, Sartain Bros. 1.
2-16- 4 Unknown, J. A. Dingwall 1.
17-15- 4 Powell, Mutual Oil 1.
15-15- 6 Lovett, Blankenburg et al 1*.
21-14- 6 Scheiff, Stroud O. & G. 1*.
7-14- 4 Norton, Heinz & Green 1.
14-13- 5 Heinzig, Prod. & Ref. 1.
18-13- 5 Gallagher, Sun Ray Oil 1.
Dewey County—
22-16-18w Elders, Morton et al 1.
Kingfisher County—
30-16-9w Benson, Pansy Oil 1*.
25-17-5w Smith, Bryssey & Hines 1.
Cherokee County—
23-18-19 McKay, Great Western Dev. 1*.
23-19-21 Unknown, Adkinson et al 1*.
35-19-22 Unknown, Gayhoma Oil 1*.
20-17-22 Benge, Beeler et al 1*.
6-16-22 Unknown, Corridan et al 1*.
Blaine County—
7-18-10w Cronister, Byers et al 1*.
21-15-10w Erlemeier, Okoma Oil 1.
Custer County—
1-15-15w Ruth, Parker O. & G. 1*.
26-15-18w Hatcher, Price & Pringley 1*.
1-14-14w Boone, Guiller & Ossenbeck 1*.
23-13-14w Fry, Pauline Oil 1*.
Pittsburg County—
29- 6-13 Townsend, Richards 1.
22- 3-13 Fee, Ward Smith 1.
28- 8-15 Cheadle, Eugene Oil 1*.
Roger Mills County—
1-16-21w Unknown, Mutual Oil 1.
9-16-21w Unknown, Roxana Pet. 1.
28-14-23w-Lindall, Porter Lease Synd. 1*.
3-13-23w Baker, Concord Oil 1*.
Harmon County—
21- 2-26w Unknown, J. C. Keys 1*.
Oklahoma County—
29-13- 1 Lovett, Charles Shaw 1.
8-12-1w Hendricks, W. R. Ramsey 1.
36-11-3w Unknown, McBith 1.
Jackson County—
20-3n-30w Baker, Douglas Oil 1.
36-2n-23w Unknown, Ship et al 1*.
Washita County—
23- 9-17w Unknown, Hartman et al 1.
29- 8-16w Wilkinson, Enid Garber Oil 1*.
Cleveland County—
20-10-4w Rowland, Garr Oil 1*.
Sequoyah County—
20-13-21 Sootawakeky, Empire G. & F. 1.
1-11-21 Wilson, Mathes Pet. 1*.
31-12-23 Sanders, J. C. King et al 1.
Grady County—
11- 4-8w Williams, Magnolia Pet. 1.
14- 4-8w Pendley, Humble O. & R. 1.
22- 4-8w Cox, Elier et al 1.
28- 3-5w Harrison, Ray Oil 2.
19- 6-5w Carson, Langston et al 1.
17- 5-7w Nell, Arrasmith et al 1.
10- 9-6w Williams, United American 1.
35- 5-8w Duke, Magnolia Pet. 1.
23- 5-8w Hill, Atlantic O. P. 1*.
16- 5-8w School Land, Concord Oil 1*.
14- 4-8w Pendley, Magnolia Pet. 2.
36- 4-8w Brown, Phillips & Caudill 1.
16- 3-6w Staten, Concord Oil 1.
36- 7-4w Barnett, Washington Dev. 1.
Beckham County—
34-10-24w Green, Boilleau et al 1.
15-10-22w Wilkerson, Phillips et al 1*.
35- 9-24w Little, Grimes Bros. 1*.
15- 9-23w Goldsmith, Hivick & Stone 1*.
Goldsmith, Clark & Tipton 1.
Goldsmith, Sayre O. & G. 1.
Buckowski, Emerald Oil 1.
Unknown, Magnolia Pet. 1*.
Montgomery, Magnolia Pet. 1.
18- 9-22w Seidel, Christmas et al 1*.
35- 9-23w Jordan, Beckham Co. Oil 1*.
14- 9-26w Githens, Grimes Bros. 1.
32- 8-22w Dalton, Simpson 1.
4- 8-24w Unknown, Small et al 1.
35-10-23w Unknown, Simpson et al 1*.
35- 9-25w Gibson, Grimes et al 1.
16- 9-23w Walker, Moffett & Sandhill 1.
21- 9-23w Roberts, Ike Williams 1.
21- 9-23w Ensey, Coogan & Wallace 1.
31- 9-23w Windle, Gypsy Oil 1.
32- 9-23w Jackson, Simpson 1.
26- 9-23w Sheets, Sayre O. & D. 1.
32- 9-23w Knight, Simpson et al 1.
33- 9-23w Martin, Foster Oil 1.
8- 8-26w Unknown, Buffalo Oil 1.
4- 8-22w Ross, Turman Oil 1.
36- 9-24w Ezell, Magnolia Pet. 1.
21- 9-23w Roberts, Ike Williams 1.
10- 8-21w Kelly, Bunell 1.
Caddo County—
2-11-12w West, Birmingham & Kelsey 1.
12- 5- 9w Stephens, Saunders O. & G. 1.
12- 5- 9w Wagner, Flora Okla 1.
Kiowa County—
33- 6-20w State, Kiowa Pet. 1.
34- 7-16w Indian Land, Conner et al 2.
Pottawatomie County—
19- 7- 4 Neglinguet, Pierce & McMan 1.
9- 5- 3 Ball, Dav Oil 1.
13-11- 3 Unknown, Blauner et al 1.
10- 6- 2 McGee, Davy et al 1*.
18- 7- 5 Vinson, Magnolia Pet. 1*.
13-10- 2 Howell, Ossie Oil 1
25-10- 4 Brooks, Noco Pet. 1*.
McClain County—
31- 5-4w Gooch, Hall & Briscoe 1.
36- 7-4w Barnett, Washington Dev. 1*.
9- 5-3e Ball, Day Oil 1.
Pontotoc County—
16- 4- 6 McClure, American O. & R. 1.
28- 3- 4 Loling, Clark et al 1.
32- 5-2e Brown, Carter et al 2*.
5- 4-5e Starrett, Craig et al 1.
34- 4-6e Perry, Lancaster & Smith 1*.
34- 5-6e Stringer, Bowles & Smith 1*.
33- 5-8e Shields, Homaokla Oil 1.
31- 5-5e Lewis, LaSalle et al 1*.
Garvin County—
20- 4-4w McKinnon, Ethel Oil 1.
3-1n-4w Wade, Tex. & Pac. C. & O. 1.
18- 3-3w Dennison, Haynes et al 1.
24-1n- 3w Bradford, Tex. Pac. C. & O. 1*.
35- 4- 1e Hines, Owl O. & G. 1*.
30- 4- 2w Mays, Gypsy Oil 1.
5-3n- 3e Grey, Manahan 1.
18-1n- 3w Derdyn, Magnolia Pet. 1*.
36-3n- 3w Sutton, Rinehart et al 1*.
10-3n- 3e Huttall, Heath & Bowman 1*.
27-2n- 1e Forman, Garland 1*.
29-2n- 2e Murray, Black Pet. 1*.
10-1n- 3w Gibson, Magnolia Pet. 6.
11-1n- 3w Harkredes, Ship et al 3.
31-1n- 2w Prince, Harver Bros. 1*.
1-1n- 1e Richardson, Bidner et al 1.
Comanche County—
14-1n- 9w Adkins, Waldman & Shrann 1.
Adkins, Glenhoma Pet. 1.
29-1n-12w Bentley, Bentley 1*.
23-2 -10w Cox, Cherry et al 1.
Cimarron County—
22-5 - 9e Martin, Campbell Riley et al 1*.
Beaver County—
33-5 -28e Dewey, Gate Valley Oil 1*.
6-1 -20e James, Empire 1.
Texas County—
6-1n-17e Wood Ranch, Beaver Oil 1*.
Coal County—
24-1n- 8e Jefferson, McPherson et al 1*.
7-2n- 8 Spears, Mecca Oil 1*.
34-2n- 9 Park, Bearman et al 1*.
Pushmataha County—
33-2n-19e Eachwood, Anchor Oil 1*.
31-3s-15e McGee, George et al 1.
7-4s-15e Fish, Luffborough et al 1.
13-2s-17e Richardson, 640 Oil 1.

SOUTHERN OKLAHOMA

Rigs

Atoka County—
17-4s-11e Dabney, Hanson et al 1.
Jefferson County—
22-3s-6w Edwards, Gant et al 1.
Johnston County—
29-4s- 5e Smith, Mitchell et al 1.
Marshall County—
36-5s 6e Holden, United 8 Oil 1.
McCurtain County—
35-8s-23e Brown, Noco Pet. 1.
Bryan County—
11-6s-9e Combs, Lyons Pet. 1.
Murray County—
13-1s- 3w Lawrence, Stauffer et al 1.
WELLS DRILLING AND SHUT DOWN
(Shut Down Indicated by *)
Murray County—
11-1s-1e Rowe, Beard & Miller 1.
Tillman County—
6-5s-15w Hanneville, Fidelity Oil 1*.
35-2s-16w Holland, Quanah Oil 1.
23-2s-17w Foster, Luffborough 1.
7-2s-18w Duncan, Battes et al 2.
10-4s-18w Couch, Spears et al 1*.
McCurtain County—
15-9s-25e Harris, Bellworth O. & G. 1*.
15-8s-26e Wilson, Red River Pet. 1*.
Love County—
9-7s 1w Gray, Davenport et al 1*.
11-7s 2e Wilson, Drillers Syndicate 1*.
29-6s- 3e Starrett, Northwestern Oil 1*.
Marshall County—
36-7s- 5e Everett, Magnolia Pet. 1.
14-7s- 7e Love, H. C. Haley 1*.
27-5s- 4e Chafney, Deck et al 1*.
22-6s- 4e Bowman, Humble O. & R. 1.
30-5s- 7e Cardinal, Mets Oil 1.
18-6s- 7e Burney, Alexander & Ellis 1*.
1-6s- 6e Sutleffe, Moore 1.
14-6s- 6e Simmons, Winters et al 1.
Johnston County—
29-3s- 4e Beems, Cooperative Oil 1.
7-5s- 8e Wilson, Tucker et al 1*.
9-4s- 4e Trotter, Root et al 1.
Jefferson County—
16-6s- 7w Jackson, Humble O. & R. 1*.
36-5s- 8w Unknown, J. C. Cook 1.
5-5s- 7w Cox, Hutton Bros. 1*.
31-4s- 8w Anderson, Shawver & Sutter 1*
23-3s- 7w Price, Empire G. & F. 2.
28-3s- 4w Sullivan, Galt et al 1.
10-7s- 6w Wray, Lung 1.
13-7s- 6w Reed, Landis et al 1.
33-7s- 6w Stanfield, Elzie et al 1*.
33-6s- 6w Watkins, Lavin & Franklin 1.
25-6s- 5w Spring, Dingwall & Sargent 1.
36-6s- 5w Sealey, J. F. Drake et al 1.
Pushmataha County—
21-3s-15e McGee, George et al 1.
Bryan County—
32-7s-8e Ramsey, Barlieu 1.
Choctaw County—
2-6s-15e Smith, Smith et al 1*.
6-5s-15e Hanniville, Fidelity O. & G. 1*.
Atoka County—
7-2s- 9e Wyand, McPherson et al 1*.
28-2s- 1e Underwood, Wapanucka Dev. 1*.
1-2s- 9e Kemp, Florence Oil 2.
Rigs, 22; wells drilling, 219; total, 241.

KANSAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	1	20	0	0
Montgomery-Wilson-Neosho-Allen	0	0	0	0
Miami-Franklin-Anderson	0	0	0	0
Greenwood-Woodson	11	265	6	0
Marion	1	20	0	0
Chautauqua-Elk	3	25	2	0
Miscellaneous	13	283	8	2
Total November	29	613	16	3
Total October	41	1,380	22	5
Difference	12	767	6	1

Summary of New Operations

County—	Rigs	Drg.	Ttl.
Butler	7	22	29
Montgomery-Wilson-Neosho-Allen	0	1	1
Miami-Franklin-Anderson	0	0	0
Greenwood-Woodson	32	35	67
Marion	7	3	10
Chautauqua-Elk	0	7	7
Miscellaneous	8	72	80
Total November	54	140	194
Total October	47	131	178
Difference	7	9	16

BUTLER COUNTY

3-25 9 Dibert, Polhamus et al 5 20
Wells completed, 1; production, 20;

GREENWOOD-WOODSON COUNTIES

34-22-10 Bernard, Rhodes & Able 1 .... dry
15-23-13 Schneider, Shaffer & Howell 8 100
27-22-10 Brown, Brinn et al 1 ..... dry
22-21-11 Shirley, Beyers & Gordon 1.... dry
23-23-10 Allen, Mid-Kansas Oil & Gas 4 40
21-23-13 Jones, R. G. Gillespie 5 35
8-23-11 Holland, J. F. Darby et al 6 .. 50
3-23-13 Sauder, Pheta Oil 7 ..... dry
15-23-11 Shadel, Rainey Oil 5 40
9-23-11 Cox, Shawver & Wilt 1 ..... dry
13-24-11 Ott, Hutton & Hogan 1 ..... dry
Wells completed 11
Production 265
Dry 6
Gas 0
Gas product.on 0

MARION COUNTY

5-22-4e Townsend, Watchorn 35 20
Wells completed 1
Production 20
Dry 0
Gas production 0

CHAUTAUQUA-ELK COUTIES

29-29- 8 Ogden, Stark et al 1 ..... dry
21-30-11 Fleak, Laskey & Rhodes 1 .. 25
4-30- 8 Ferguson, C. E. Rothh & Co. 1 dry
Wells completed 3
Production 25
Dry 2
Gas 0
Gas production 0

MISCELLANEOUS KANSAS

Cowley County—
19-33- 4e Holtby, Shawver & Sutter 1 dry
21-34- 7 McGill, Phillips Pet. 2..... dry
17-30- 7 Fall City Land Co., Phillips Pet. 18 50

5-30- 3 Hillbrecht, Parkin & Reynolds 1 ..... dry
26-32- 4 Goode, J. A. Hull Co. 1 ..... gas
16-32- 5 Porter, Sutter et al 1 ..... gas
36-32- 4 Hostetter, Price & Wentz 3.. 30
Chase County—
30-20-12 Richards, Shaw & Sutter 1.... dry
Harvey County—
4-23-2e Wetschenski, Glasco & Big Harvey 3 203
Lyon County—
14-20-12 Martin, Sharpless & Syark 1.. dry
22-21-11 Shirkey, Byers &Gordon 1... dry
Sumner County—
34-33-2e Judd, Plateau Oil 1 ..... dry
Comanche County—
11-32-16w Roberts, Interseas Service Co. 1 ..... abd

Wells completed	13
Production	283
Dry	8
Gas	2
Gas production	3,259,000

BUTLER COUNTY
Rigs
32-26- 6 Shriver, Foraker 1.
1-29- 6 Baker, Tobin et al 1.
36-27- 5 Yates, Yates Oil & Gas 5.
4-23-2e Conway, Mason & Ralston 1. Wetschenski, Newton Oil 3. Brandweide, Derby Oil 1.
27-28- 5 Cameron, Elwell et al 2.
Wells Drilling
16-23- 6 Hoy, Ramsey Pet. 1.
18-27- 7 Eckel, Moulter & Ray 1.
11-30- 4 Joslin, Gypsy Oil 1.
15-30- 4 Magnuson, Shawver & Sutter 1 Newton, Shawver & Sutter 1.
30-29- 3 Robinson, Robinson 1.
12-29- 5 Baker, Tobin et al.
Shut Down
26-23- 7 Sturgeon, Clark et al 1.
20-27- 6 Clark, Empire Gas & Fuel 2.
33-27- 7 Cleary, Baker et al 1.
22-28- 6 Petit, John Sharp 1.
30-28- 6 Holland, Neiman et al 1.
17-28- 7 Everton, Dutton & Morgan 1.
23-28- 7 Brewer, Rich et al 2.
21-29- 6 Baker, Tobin et al 1.
5-29- 7 Buzzard, Tobin et al 1.
23-29- 5 Burch, Bellfort et al 1.
35-30- 5 Wray, Royer & Royer 1.
10-27- 3 Long, Faulders & Ralston 1.
2-29- 2 McFleming, Higgens et al 1.
32-26- 6 Palmer, Sparta Oil 1.
12-23- 7 Hazlett, Moyer et al 1.
Rigs, 7; wells drilling, 22; total, 29.

MARION COUNTY
Rigs
20-21- 4 Reamy, National Refining 12.
18-21- 5 Freeley, Robinson et al 9.
5-22- 4 Townsend, Watchorn Oil & Gas 34.
15-22- 4 Barton, Orlando Pet. 19.
21-21- 5 Urshel, Federal Oil 4, 5, 6.
Shut Down
5-22- 4 Townsend, Watchorn Oil & Gas 33.
2-20- 3 Anderson, Lampe et al.
32-21- 4 Security Co., Morgan et al 1.
Rigs, 7; wells drilling, 3; total, 10.

GREENWOOD-WOODSON COUNTIES
Rigs
1-21-13 Tefft, Pryor & Lookhart 2.
27-22-13 Clark, R. G. Gillespie 1.
34-22-13 Eslinger, Theta Oil 8.
20-23-13 Griblin, R. G. Gillespie 7. Swanson, R. G. Gillespie 15.
21-23-13 Jones, R. G. Gillespie 7.
23-23-13 Hesler & Dresser Oil 7.
9-26-12 Paske, Tatlock et al 1.
21-27-13 Wisher, Farrell et al 1.
23-22-10 Clopton, Syndicate Oil 1.
31-22-10 Mathers, Weiss et al 2.
28-22-11 Clark, Gray et al 5.
24-23-10 Burkett, The Texas Co. 1.
27-23-10 Thrall, Mission 32.
29-23-10 Thrall, Mission Oil 16, 17. Thrall, Empire Gas & Fuel 4. Thrall, Waite Phillips et al 2.
32-23-10 Thrall, Mission Oil 22, 23, 24, 25, 26. McKee, Phillips Pet. 3, 4.
5-23-11 Seely, Tidal Oil 7.
34-24- 9 Nixon, Gypsy Oil 3.
2-25- 8 Clark, Harwood & Winters 1.
3-25- 9 Dibert, Polhamus et al 4.
4-25- 9 Kenley, Pure Oil 3.
30-25- 9 Moss, Derby Oil 9.
29-26- 9 Witty, Magnolia Pet. 1.
Wells Drilling
19-22-12 Imthurn, Simmons & Puleski Oil 1.
21-23-13 Jones, R. G. Gillespie 6.
31-22-10 Barnard, Rogers et al 2. Barnard, Rogers & Jones 2.
19-22-11 Harris, Empire Gas & Fuel 1.
13-23-10 Edwards, White Eagle Oil & Refining 1.
22-23-10 Tucker, Mission Oil 2.
4-24-10 Briketiz, Orlando Pet. 1.
23-24-10 Edwards, Miller 1.
5-28-11 Anderson, N. F. Clark 2.
8-28-11 Davis, N. F. Clark 4.
14-24- 9 Agerd, Bason et al 1.
1-25- 8 Jackson, Harwood & Winters 1.
18-25- 9 Ladd, McGinnis et al 1.
18-28- 9 Dixon, Jamison et al 1.
Shut Down
8-22-12 Pedroja, Eugenia Oil & Gas 1.
11-24-12 Dalton, Franklin Oil 13, 14.
15-24-12 Fleming, Lauck et al 1.
5-25-13 Gilroy, International Dev. 1.
17-26-13 Baker, Danciger et al 1.
5-22-10 Pixlee, Kreer et al 1. Pixlee, Pixlee Pet. 3.
27-22-11 Wick, National 7.
5-25-11 Seely, Empire Gas & Fuel 7.
23-24-10 Edwards, Edwards et al 1.
32-24-10 Lockwood, Russell et al 1.
24-25-11 Bollinger, Forrester 1.
15-24- 8 Nancock, Sharpless & Stark 1.
24-24- 9 Moore, Golman et al 1.
4-25- 9 Kenley, Pure Oil 1.
19-25- 9 Ladd, Mid-Kansas Oil & Gas 2.
29-25- 9 Ladd, Griggs et al 1.
9-26- 8 Blankenship, Cressler Oil 4.
32-27- 8 Taylor, Havechill Pet. 1.
Rigs, 32; wells drilling, 35; total, 67.

CHAUTAUQUA-ELK COUNTIES
Wells Drilling
26-29- 9 Jackson, Clark Oil 1.
6-33- 9 Reed, Scott Oil 1.
12-30- 9 Donnell, Secrice Oil 1.
Shut Down
9-34- 9 Fisher, Brouk 1.
12-29- 8 Porter, Both Burt Oil 3.
6-29- 9 Barnes, Junker et al 2.
31-29- 9 Denton, Mitchell et al 1.
Rigs, 0; wells drilling, 7; total, 7.

MONTGOMERY COUNTY
Wells Drilling
25-33-15 Johnson, Empire G. & F. 1.
Rigs, 0; wells drilling, 1; total, 1.

MISCELLANEOUS
Rigs
Lyon County—
36-21-10 Harriott, Gentles et al 1.
Morris County—
3-12- 7 Renier, Northern Oil 1.
Shawnee County—
34-10-15 Worley, McKnight 1.
Coffey County—
33-20-15 Andrews, Sunbeam Pet. 1.
Pottawatomie County—
17- 9-12 Stewart, Crawford et al 1.
31- 9-12 Greshaver, Crawford et al 1.
Cowley County—
6-32- 5 Elrod, Milliken & Hayhurst.
19-32- 5 Lierman, McNab et al 1.
Wells Drilling and Shut Down
(Shut Down Wells Indicated by *)
Cowley County—
1-35- 7 Olson, Slick et al 6.
1-32- 4 Morris, Ark. Fuel Oil 1.
36-32- 4 Kertly, Wachorn 1. Hostutler, Price & Wentz 4*. Kertly, Emerald Oil 3*, 4*.
18-32- 6 Harrison, Southwestern 1*.
5-31- 6 Eastman, Martin & Wilson 1.
7-31- 6 Eastman, Titus et al 1.
15-30- 4 Newton, Elwell, S. & S. Co. 1. Newton, Shawver & Sutter 1. Magnuson, Sutter & Stearns 1.
19-34- 8 Wilson, Waite Phillips Pet. 1.
20-33- 3 Johnson, Hill & Waite Phillips 1.
32-31- 4 Brasher Bros. 1*.
25-32- 4 Gehlik, Boggs et al 1. Baker, Torrence & Torrence 3.
6-32- 5 Hilbert, Twin State Oil 1.
35-30- 5 Wray, Rogers Bros. 1.
6-32- 5 Brown, Trees Bros. 1.
11-30- 4 Joslyn, Gypsy Oil 2.
Coffey County—
29-20-13 Milner, Waite Phillips 1.
24-20-13 Unknown, Smith et al 1.
12-20-13 Martin, Addison et al 1*.
1-21-13 Edwards, Pryor & Lockhart 1.
Lyon County—
16-20-11 Cowan, Empire G. & F. 1.
13-21-10 Schrader, Super Six 1*.
20-20-12 Miller, Tatlock et al.
Morris County—
17-17- 9 Chase, Fisher et al 1*.
30-13- 6 Foster, Marshall et al 1*.
Reno County—
20-26- 7 Unknown, Hayes & Arnold 1*.
28-25-6w Unknown, Hayes et al 1.
Finney County—
33-21-30 Ladd, Garden City Oil 1.
Seward County—
34-34-34w Wood, Defender O. & G. 1.
20-33-33w Seely, Seward Oil 1*.
Barber County—
33-30-14w Unknown, Wizard Oil 1.
Kingman County—
24-27-7w Garber, Hayes et al 1*.
Barton County—
22-18-13w Everleigh, Mountain States 1*.
27-18-12 Sooy, Cheyenne Oil 1*.
31-18-12 S. J. Tall, Haynes 1.
Dickinson County—
34-11- 4 Dans, Marshall et al 1*.
Clay County—
21- 9- 4 Unknown, Skow Bros. 1.
Lincoln County—
20-10-11w Darman, Delhi Oil 1*.
Pottawatomie County—
11-10-12 St. Mary's, Crawford et al 1*.
4-10-12 Doyle, Crawford & Jennings 1*.
Sedgwick County—
2-29-2e Fleming, Higgins et al 1.
26-26-1w Alex, Royles & Reagan 1.
30-29-3w Robinson, Robinson et al 1.
Sumner County—
34-34-1w Byers, Cloud et al 1*.
13-23-2e Turpin, Brady Bros. 1.
33-32-2e Young, Frantz et al 1.
13-31-2e Stout, S. H. E. Oil 1.
16-30-1w Hitchcock, Champlin Ref. 1.
9-33-1e Miller, Dillard Bros. 1.
Harvey County—
4-23- 2 Conway, Mason & Ralston 1. Branawede, Derby Oil 1.
Chase County—
24-22- 9 Browning, Sinclair O. & G. 1.
19-21- 6 Griffith, Security O. & G. 1*.
19-19- 8 Koub, Dave Alter et al 1.
Riley County—
26-10- 6 Marks, O'Neil et al 1*.
20-10- 7 Thierer, Wilton Oil 1.
36- 7- 4 Doyle, Gentles et al 1.
McPherson County—
34-18-1w Wain, Wright Oil 1*.
Washington County—
16- 2- 1 Unknown, Mitchell O. & G. 1.
9- 5- 5 Unknown, Barnes O. & G. 1.
Trego County—
5-11-24w Welch, Keys Pet. 2*.
5-11-25w Polen, Cantrell et al 1*.
9-11-22 Unknown, Mississippi Valley Oil 1.
Republic County—
23- 2-1w Welders, Mitchell O. & G. 1*.
Woodson County—
30-26-17 Solomon, Equity Oil 1.
Rice County—
35-20-6w Smith, Younker & Douglass 1.
Russell County—
8-12-15w Unknown, Liggett et al 1.
Rigs, 8; wells drilling, 72; total, 80.

EAST CENTRAL TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl
Navarro	122	398,628	4	0	31	129	160
Limestone	1	0	1	0	2	27	29
Miscellaneous	13	0	13	0	9	60	69
Total Nov.	136	398,628	18	0	42	216	258
Total Oct.	167	405,533	17	0	73	226	299
Difference	31	6,905	1	0	31	10	41

NAVARRO COUNTY
POWELL FIELD
Burke, Witherspoon et al 8 800
Burke, Witherspoon et al 9 1000
Irvine, The Texas Co. 6-B..... 100
G. Kent, Humble O. & R. 12.....1900
McKie, Humble O. & R. 10-B..... 9
McKie, Humphreys Oil Co. 46..... 125
McKie, Humphreys Oil Co. 48..... 185
McKie, Humphreys Oil Co. 49..... 160
McKie, Humphreys Oil Co. 55..... 95
McKie, Humphreys Oil Co. 56..... 235
McKie, Humphreys Oil Co. 57..... 300
McKie, Humphreys Oil Co. 60..... 1800
Chapman, McMan Oil Co. 10..... 50
McKie, Roxana Pet. Co. 5-A..... 135
Kellum, Atlantic O. P. Co. 4..... 4000
Kellum, Atlantic O. P. Co. 5..... 3000
Kellum, Atlantic O. P. Co. 6.....12000
Kellum, Atlantic O. P. Co. 7..... 3500
Kellum, Atlantic O. P. Co. 2.....10000
Kellum, Atlantic O. P. Co. 3.....12000
Cerf, Brooks et al 2..... 5400
Cerf, Brooks et al 3..... 3000
Hill, Elliott et al 1..... 1300
Cerf, Humble O. & R. 3.....21000
Cerf, Humble O. & R. 4..... 2400
Cerf, Humble O. & R. 5-A..... 900
Cerf, Humble O. & R. 6-A..... 1800
Cerf, Humble O. & R. 1-B..... 4800
Davis, Humble O. & R. 3..... 2500
Davis, Humble O. & R. 10..... 2400
Davis, Humble O. & R. 11.....2500
Davis, Humble O. & R. 13..... 300
Davis, Humble O. & R. 14..... 300
Davis, Humble O. & R. 15..... 300
Smith, McIntyre et al 1..... dry
Fleming, Humble O. & R. 2-A..... 7800
Fleming, Humble O. & R. 3-A..... 7600
Fleming, Humble O. & R. 5-A..... 2100
Humphreys, Humble O. & R. 9..... 2830
Humphreys, Humble O. & R. 10..... 1500
Humphreys, Humble O. & R. 11..... 2700
Humphreys, Humble O. & R. 13..... 400
Humphreys, Humble O. & R. 15..... 2000
Humphreys, Humble O. & R. 16..... 1000
Humphreys, Humble O. & R. 17..... 1000
Humphreys, Humble O. & R. 29..... 1000
Humphreys, Humble O. & R. 21..... 1000
Ramsey, Humble O. & R. 7-A..... 870
Ramsey, Humble O. & R. 8-A..... 700
Walker-Pugh, Humble O. & R. 5..... 366
Walker-Pugh, Humble O. & R. 6..... 1275
Walker-Pugh, Humble O. & R. 7..... 2500
Walker-Pugh, Humble O. & R. 8..... 1500
Kent, G. Kent 3..... 5000
Kent, G. Kent 5..... 5000
Kent, G. Kent 12..... 1600
Brown, Kirby Pet. 4..... 165
Cerf, McMahon et al 1..... 2400
Cerf, Parker et al 1..... 2000
Fleming, The Texas Co. 1..... 3300
Fleming, The Texas Co. 2.....12000
Fleming, The Texas Co. 3..... 1200
Fleming, The Texas Co. 5.....12000
Fleming, The Texas Co. 6..... 9500
Fleming, The Texas Co. 7.....12000
Fleming, The Texas Co. 8..... 4500
Fleming, The Texas Co. 10..... 9000
Fleming, The Texas Co. 12..... 1000
Ramsey, Humble O. & R. 9-B..... 1800
Ramsey, Humble O. & R. 11-B..... 900
Ramsey, Humble O. & R. 13-B..... 1215
Kent, Humphreys Oil Co. 6..... 75
Kent, The Texas Co. 12..... 237
Kent, The Texas Co. 13..... 440
Kent, The Texas Co. 14..... 900
Kent, The Texas Co. 15..... 700
Kent, Collins & Wheelock 1..... 860
Kent, Collins & Wheelock 2..... 215
Sweatman, Empire G. & F. 1..... 1200
Sweatman, Empire G. & F. 2..... abd
Sweatman, Empire G. & F. 3..... dry
Barron, Gulf Production Co. 2..... 7500
Barron, Gulf Production Co. 5..... 1000
Crews, Gulf Production Co. 3..... 7200
Crews, Gulf Production Co. 6..... 2500
Crews, Gulf Production Co. 7..... 7500
Crews, Gulf Production Co. 8..... 2100
Crews, Humble O. & R. 1..... 9560
Crews, Humble O. & R. 2..... 2100
Crews, Humble O. & R. 3..... 7600
Crews, Humble O. & R. 4..... 1300
Crews, Humble O. & R. 8..... 2100
Kent, Humble O. & R. 4..... 7400
Fleming, Kirby Pet. Co. 1.....12000
Howell, Mutual Oil Co. 1.....18000
Keith, Skelly Oil Co. 1..... 7000
Keith, Skelly Oil Co. 4..... 5000
Keith, E. L. Smith Oil Co. 2..... 8600
Keith, E. L. Smith Oil Co. 5..... 6900
Keith, E. L. Smith Oil Co. 6..... 6500
Rose, Simms Oil Co. 1..... 5000
Crews, Tidal-Buttram Oil Co. 3..... 5000
Crews, Tidal-Buttram Oil Co. 5..... 7000
Crews, Tidal-Buttram Oil Co. 6..... 6000
Crews, Tidal-Buttram Oil Co. 7..... 6000
Phillips, Tidal-Buttram Oil Co. 4..... 5000
Phillips, Tidal-Buttram Oil Co. 6..... 4500
Phillips, Tidal-Buttram Oil Co. 7..... 1500
Phillips, Tidal-Buttram Oil Co. 8..... 6300
Right of Way, Texas & Brazos Valley R. R. 1 8000
Right of Way, Texas & Brazos Valley R. R. 2 4500
Smith, McGood Oil Co. 1 ..... dry
Crews, Humble O. & R. 6 960
E. L. Kent, Humble O. & R. 2 1200
Boyd, Simms Oil Co. 3 1800
Keith, Skelly Oil Co. 3 1300
McKie, Humphreys Oil Co. 61 1500
McKie, Humphreys Oil Co. 62.. 1800
Keith, E. L. Smith Oil Co. 4..... 6000
Crews, Humble O. & R. 10:... 1000

CURRIE FIELD
Morrow, Hughes Dev. Co. 3 ..... dry

Wells completed	122
Production	398,628
Dry	4

MISCELLANEOUS
Milam County—
Posey, Guberson et al 1..... .... dry
Starks, Williams & Hill 1 ..... abd
Red River County—
Dinviddle, Brewster Haynes 1... ... abd
Wortham, O'Bannon Bros. 1 ..... dry
Garland, Rigging O. & G. 1 .... abd
Raines County—
Vorley, Jeffries Oil Co. 1 .... abd
Anderson County—
Parker, J. F. Williams et al 1 ..... dry
Brooks & Auld, Rosser Pet. Co. 1. ... dry
Monning Plant, Palestine O. & G ... abd
Cherokee County—
Clapp, Coolington Drg. Co. 1..... abd
Williamson County—
Stellos, Magnolia Pet. Co. 1..... dry
Vanzandt County—
Rice, Transcontinental Oil 1 ..... dry
Hunt County—
Haynes, Tri Cities O. & G. 1..... dry
Limestone County—
Head, Tex Rickard 1 ..... dry

Wells completed	11
Production	1
Dry and abandoned	4

NAVARRO COUNTY
Rigs
Chapman, McMan Oil Co. 7.
Burke, Witherspoon et al 10.
G. Kent, Humble O. & R. 13.
Chapman, McMan Oil 11.
Kellum, Atlantic O. P. 9.
Wovlens, Barclay & Meadows 1.
Hill, Elliott et al 2.
Cerf, Humble O. & R. 7-A.
Cerf, Humble O. & R. 4-B, 5-B.
Alexander, Hughes Dev. Co. 4.
Hill, Hoosier et al 1.
Kent, Garland Kent 16, 17, 18, 19, 20.
Barry, Garland Kent 1.
Cerf, McMahan et al 2.
Cerf, Parker et al 2.
Cerf, Parker et al 1-B.
Cerf, E. L. Smith Oil 1-B.
H. B. Boyd, Gulf Production Co 2.
Harvard, Gilbert Johnson 2.
Harvard, Gallowat et al 1.
Crews, Humble O. & R. 9.
Howell, Mutual Oil Co. 6, 7.
Barron, Simms Oil Co. 1.
Rose Simms Oil Co. 5.
Autry, The Texas Co. 1.
Wells Drilling
Vinson, Seaport Pet. Co. 2.
Keyser, Findley et al 1.
Christian, McMan Oil Co. 1.
Chapman, McMan Oil Co. 6.
Kent, The Texas Co. 15, 16.
Gentry, Bass et al 3.
Irvine, Humble O. & R. 13-C.
McKie, Humphreys Oil Co. 54, 58, 59, 64.
Chapman McMan Oil Co. 1.
Kellum, Atlantic O. P. Co. 5.
Wovlens, O'Hern et al 1.
Cerf, R. E. Brooks 4, 5, 6, 7.
Bush, Gulf Prod. Co. 2.
Cerf, Humble O. & R. 8-A, 9-A, 10-A.
Davis, Humble O. & R. 8, 9, 16.
Fleming, Humble O. & R. 6-A, 7-A, 8-A.
Hill, Humble O. & R. 1.
Fleming, Humble O. & R. 3-B.
Humphreys Oil, Humble O. & R. 14, 18, 22.
Ramsey, Humble O. & R. 1.
Walker, Humble O. & R. 4.
Ramsey, Humble O. & R. 10-B.
Alexander, Hughes Dev. Co. 1, 2, 3.
Kent, Garland Kent 2, 4, 6, 7, 8, 9, 10, 12, 13, 14, 15.
Kent, New Domain Oil Co. 5.
Cerf, E. L. Smith Oil Co. 1.
Humphreys, Terrell Prod. Co. 1.
Clements, Millerman & Dorney 1.
Fleming, Upchurch et al 1.
Ramsey, Humble O. & R. 8-B, 12-B.
Kellum, Atlantic O. P. Co. 8.
Goldman, Atlantic O. P. 1.
Sweatman, Empire G. & F. 4.
Boyd, Gulf Prod. Co. 1.
Barron, Gulf Prod. Co. 6, 7.
Crews, Gulf Prod. Co. 8, 10, 11, 12, 13, 15, 16.
Harvard, Gilbert Johnson 1.
Crews, Humble O. & R. 7, 8, 9, 11.
Kent, Humble O. & R. 1, 3, 4.
Fleming, Kirby Pet. Co. 2.
Howell, Mutual Oil Co. 2, 3, 4, 5.
Wovlen, McIntyre et al 1.
Wovlens, Reeves & Jackson 1.
Keith, Skelly Oil Co. 2, 5, 6, 7.
Barron, Sun Oil Co. 1.
Keith, E. L. Smith Oil Co. 3, 7, 8, 9, 10
J. A. Boyd, Simms Oil Co. 1, 2, 3.
Howell, Simms Oil Co. 1.
Bressie, Tidal Oil Co. 1.
Boyd, Webster & Pickens 1.
Harvard, Yoder et al 1, 2.
Currie District—
Bounds, Humphreys Oil Co. 8.
Bounds, Cosden O. & G. Co. 2.
Longbotham, Snowden & McSweeney 7, 8, 9
Nash, Sun Oil Co. 1.
Morrow, The Texas Co. 1.
Morrow, Trapshooter Riley 1.
Bounds, Neblock et al 1.
Richland District—
Brown, McDonald et al 1.
Swink, Miller & Lewis 1.
Miscellaneous—
Thornton, Ranger Vindicator ..
Rigs, 31; wells drilling, 129; total, 160.

LIMESTONE COUNTY
Thomas, Humphreys Oil Co. 24.
Reid, Humphreys Oil Co. 10.
Wells Drilling and Shut Down.
Adamson, Humphreys Oil Co. 8.
Bethelsen, Humphreys Oil Co. 8.
Hayter, Humphreys Oil Co. 6, 10.
Kendricks, Humphreys Oil Co. A-1, 14.
Thomas, Humphreys Oil Co. 22, 23.
Arnott, J. F. Smith 1.
Priddy, Yoder et al 1.
Jordan, Grogan et al 1.
Bend, Perrian Trustees 2.
Cook, Mexia Red Seal 1.
Oliver, Yoder et al 1.
Stoker, The Texas Co. 3.
Welch, Humphreys Oil 3.
Gill, Iron Clad Oil 1.
Brown, Humphreys Oil Co. 1.
Bassett, Transcontinental Oil Co. 1.
Rigs, 2; wells drilling, 20; total, 22.

MISCELLANEOUS
Rigs
Bowie County—
Chalk, O'Bannon Bros. 1.
Milam County—
Ashley, Milano Pluet 1.
Raines County—
Hunt, Lovewell Oil Co. 1.
Smith County—
White, Whittaker & Maddock 1.
Anderson County—
Turner, Hughes et al 1.

Cass County—
Spears, Bankers Trust 1.
Caster, Gibbs Pet. Co. 1.
Falls County—
Allen, Southern Rose O. & G. 1.
Henderson County—
Kade, Ben Crow Oil Co. 1.
Pully, Mitcham et al 1.

Wells Drilling and Shut Down

Freestone County—
Smith, Pope et al 1.
Bounds, Smith et al.
Knight, O. K. O. & G. 1.
Bounds, Trapshooter Reilly 1.
Henderson County—
Wood, F. Haynes 1.
Johnson, Pipe Grove Oil Co. 1.
Ziemendanger, Mexia Henderson Oil Co. 1.
Smith-Logan, Union Pet. Co. 1.
Hunt County—
Hays, Tri-Cities O. & G. 1.
Miller, McPhail O. & G. 1.
Kaufman County—
Carlisle, Roscie et al & T. P. C. & O. 1.
Porter, Trapshooter Reilly Oil Co. 1.
Leon County—
Bolden, Leon County Oil Dev. 1.
McKinnon, Kechi O. & G. 2.
Smith, Deep Springs Oil.
Carrington, Mexia Marquet Oil Co. 1.
Milam County—
Posey, Guberson et al 1.
Reed, Rosebud Mexia 1.
Lotters, F. C. Nelson 1.
Stark, Williams & Hall 1.
Bremond, Twin City O. D. 1.
McLennan County—
Shelton, Tudor Oil 1.
Schnecker, Mexia Central Oil 1.
Halloway, Mexia Commonwealth Pet. Co. 1.
Anderson County—
Manning Plant, Palestine Oil Co. 1.
Bowie County—
Parkley, Baldy Springs Oil Co. 1.
Hooks, North Boston O. & G.
Taylor, Tri-State Oil Co. 1.
Cass County—
Evans, Caldwell et al 1.
Crew, Simms Oil Co. 1.
Dallas County—
Grimes, Carnahan Drg. Co. 1.
Gracey, Dallas Pet. & Dev. Co. 1.
Davis, It's In Dallas Oil Co. 1.
Mitchell, It's In Dallas Oil Co. 1.
Eubanks, W. F. Nabors et al 1.
Ellis County—
Hoesmer, Mexia Tri State Co. 1.
Falls County—
Price, Balto-Tex Oil Co. 1.
Jennings, Inland Oil Co. 1.
Peters, Grove Edwards 1.
Peacock, High Banks Oil Co. 1.
Harlan, Texola Pet. Co. 1.
Clark, Peace Pet. Co. 1.
Covington, Mayflower Oil Co. 1.
Brown, Edwards et al 1.
Red River County—
Simmons, Clarksville Texas Oil Co. 1.
Arnold, Isabelle Gibbons Co. 1.
Antone, Johnson Pet. Syndi. 1.
Robertson County—
Holloway, Campbell et al 1.
Walker, Kentucky-Texas Oil Co. 1.
Stephens, Texola Oil Co. 1.
Smith County—
Syken, Rainbow Oil Co. 1.
Carey, North Texas Oil Co. 1.
Phillips, Apex Oil Co. 1.
Titus County—
Oregon, Bosler et al 1.
Van Zandt County—
Jones, Mexia Drg. Co. 1.
Dunbar, Terrell Oil Co. 1.
Williamson County—
Ganzart, Amarillo Oil Co. 1.
Sebran, McNeil & McDowell 1.
Koonson, United Oil Workers 1.
Wood County—
Adrian, Golden Oil Co. 1.
Senter, Texas O. & M. Co. 1.
Rigs, 9; wells drilling, 60; total, 69.

NORTH CENTRAL TEXAS

Summary of Wells Completed
(Including November 22, 1923)

District—	Comp.	Prod.	Dry	Gas
Wichita	7	88	3	0
Burkburnett	4	765	1	0
Eastland	11	280	4	3
Stephens	8	3,995	2	0
Young	2	20	1	0
Archer	32	2,140	9	0
Wildcats	11	120	5	1
Total November	75	7,418	25	4
Total October	124	9,279	50	8
Difference	49	1,861	25	4

Summary of New Operations

District	Rigs	Drg.	Ttl.
Wichita	9	24	33
Burkburnett	2	25	27
Eastland	6	19	25
Stephens	11	16	27
Young	6	12	18
Archer	17	44	61
Wildcats	10	44	54
Total November	61	184	245
Total October	58	197	255
Difference	3	13	10

WELLS COMPLETED

WICHITA AND WILBARGER COUNTIES

Tuttle, Magnolia Pet. Co., 1..... dry
Fassett, Knight et al 1..... dry
Burnett, Texhoma O. & R. Co., 8-A.... 20
Parker, Temple et al 1..... dry
Edgerly, Bridwell et al 1..... 32
Yarborough, Hobbs Bros. 17..... 21
Rhodes, Duncan et al 2..... 15

Wells completed 7
Dry 3
Production 88

BURKBURNETT

Dale, The Gulf Pro. Co. 12..... 300
Hirschi, The Sun Co. 22..... 100
Saunders, John O'Neil 1..... 365
Foster, Pigg et al 1..... dry

Wells completed 4
Dry 1
Production 765

YOUNG COUNTY

Glidwell, Mutual Oil Co. 2..... 30
Bower, Shamrock Oil Co. 2..... dry
Wells completed 2

Dry 1
Production 30

ARCHER COUNTY

Carter Bros., The Texas Co. 7..... 140
Kunkel, Whitehead et al 1..... dry
Carter Bros., The Texas Co. 6..... 160
Wilson, Bell et al 2-A..... 67
Parrish, Burns et al 1..... 20
Ferguson, Carter et al 2..... 75
Wilson, Chenault et al 3-C..... 78
Wilson Chenault et al 3-B..... 125
Wilmot, Dale et al 4..... 65
Wilson, Featherstone et al 2-B..... dry
Mrs. Crater, Gwynn et al 2..... dry
Carter Bros., Hawkins et al 2..... 160
Netherton, Maer et al 1..... dry
Parrish, The Oil Development Co. 1-B.. 20
Wilmot, Payne et al 3..... 90
Parrish, Roberts et al 4..... 100
Wilson, 66 Oil Co. 2..... 285
Wilmot, Underwood Drilling Co. 1..... 20
Netherton, Humble O. & R. Co., 1..... 50
Richardson, McGee Bros., 1..... dry
Wilmot, Bohler et al 1..... 50
Hawkins, Collender et al 1..... dry
Wilson, Featherstone et al 1-C..... 250
Black, Hudspeth et al 1..... dry
Wilson, Petroleum Producing Co., 5-C.. dry
Richardson, Scott et al 1..... dry
Ferguson, Shaw et al 5..... 20
Ferguson, Shaw et al 12..... 15
Wilson, Smith et al 1..... 50
Wilson, Smith et al 2..... 70
Carter Bros., Sunshine State O. & R. Co. 8..... 30
Carter Bros., Sunshine State O. & R. Co. 10..... 200

Wells completed 32
Dry 9
Production 2140

STEPHENS COUNTY

Caton, the Humble O. & R. Co. 2..... dry
Jones, Curry Pool O. Co. 1..... 200
Jones, Haile and Knight 4..... 200
Lee, Lacy et al 2..... 5
Jones, Republic Pro. Co. 3..... 390
Shipley, Eastland O. Co. 1-B..... 2000
Black Bros., The Texas Co. 19..... dry
Shipley, Foster et al 2-C..... 1200

Wells completed 8
Dry 2
Production 3995

EASTLAND COUNTY

Allen, Donnelly Bros. 1..... dry
Jones, Clayton & Turner 2..... 200
Amis, Gordon Pet Co. 1..... gas
Abernathy, Post Duke O. Co. 2..... gas
Neville, Andy Urbln 1..... dry
Walker, Woif et al 1..... 15
Baird, Pioneer Pet. Co. 1..... 15
Wood, Gholsen et al 1..... dry
Edison, Knox-Lewis Dev. Co. 1..... 50
Hogg, Lone Star G. Co. 2-A..... gas
Hightower, Panhandle O. & R. Co. 2... dry

Wells completed 11
Dry 4
Gas 3
Production 280
Gas production 52,000,000

WILDCATS

Shackelford County—
Poindexter, Humble O. & R. Co. 1-D... dry
Poindexter, Ibex Oil Co., 8..... 10
Callahan County—
Hayden, Curtis et al 1..... dry
Palo Pinto County—
Costello, Skell Oil Co. 1..... 50
Robinson, Mutual Oil Co. 1..... 10
River Bed, Scott & McClure 1..... 50
Watson, Upham Gas Co. 3..... dry
Clay County—
Hapgood, Dunning O. & G. Co. 1..... dry
Donnelly County—
Mooreman, Swanson Oil Co. 1..... dry
Brown County—
Elsberry, Canyon O. & G. Co. 2..... dry
Smith, Haynes et al 1..... gas

Wells completed 11
Dry 5
Gas 1
Production 120
Gas production 100,000

WICHITA AND WILBARGER COUNTIES

Rigs

Waggoner, Black Cat O. Co. 5-B.
Douglas, Camp O. & G. Co. 7-B.
FW & DC, Greenwood et al 1.
Hoanaker, Memphis Pet. Co. 3.
Burnett, Empire G. & F. Co. 69.
Waggoner, Magnolia Pet. Co. 31-A.
Burnett, Magnolia Pet. Co. 78-B.
Marshall, Panhandle O. & R. Co. 1.
Jackson, Chappell O. Co. 1.

Wells Drilling

Waggoner, Kruger et al 7.
Douglas, Magnolia Pet. Co. 6.
Waggoner, Rowe Drilling Co. 1.
Waggoner, Texhoma O. & R. 1-J.
Fisher, Fisher et al 3-B.
Allingham, Herford O. Co. 11.
Burnett, Hartford Trust Co. 6.
Waggoner, Magnolia Pet Co. 26-A, 5-B.
Pere Waggoner, Magnolia Pet. Co. 1.
Burnett, Magnolia Pet. Co. 1-A.
Waggoner, Noel et al 1.
Burnett, Simms O. Co. 13.
Waggoner, Texhoma O. & R. Co. 10-F, 11-F, 27-A.
Burnett, Texhoma O. & R. Co. 2-B.
K. & K., Carter et al 2.
Davis, Kentucky O. Corp. 1.
Daume, Stedham et al 2.
McCaleb, Robinson et al 1.
Cotta, Knight et al 1.
Waggoner, Noble O. Co. 1.
Stephens, South Vernon O. Co. 1.
Wells drilling, 24; rigs, 9; total, 33

BURKBURNETT

Rigs

Reilly, Magnolia Pet. Co. 91.
Holcomb, Magnolia Pet. Co. 22.

Wells Drilling

Hewitt, Coleman Drilling Co. 1.
Dale, Gulf Prod. Co. 13, 14.
Van Horn, Howell et al 1.
Eads, Kemp et al 5.
Langford, Langford et al 7, 8.
Chapman, Morgan et al 1.
Potter, McDabb O. Co. 2.
Saunders, McDabb Oil Co. 2, 3.
Reilly, Magnolia Pet. Co. 90, 91, 99.
Hortoin, Magnolia Pet. Co. 20.
Holtzen, Magnolia Pet. Co. 7.
Saunders, John O'Neil 2, 3, 4.
Saunders, Perkins et al 1, 2.
Hirschi, Pigg Oil Co. 17.
Hirschi, Sun Co. 23, 24.
Roller, Robinson O. Co. 6.
Wells drilling, 25; rigs, 2; total, 27.

ARCHER COUNTY

Rigs

Carter Bros., The Texas Co. 9.
Hartini, Armstrong et al 1.
Wilmot, Camp O. & G. Co. 5.
Wilson, Featherstone et al 3-C, 7-C.
Mrs. Carter, Gwynn et al 5.
Wilson, Kentucky O. Corp. 1.
Nelson, Larkin et al 1.
Wilson, Riner et al 1.
Richardson, Shamrock O. Co. 3.
Helm, Stewart et al 1.
Ford, Thomas et al 1.
Ford, Pace et al 1.
Carter Bros., Sunshine State O. & R. Co. 5, 11, 12.
K. & K., White Oil Corp. 11.

Wells Drilling

Carter Bros., The Texas Co. 8.
Wilson, Barkley et al 1, 2.
Wilson, Barnes et al 1.
Wilson, Bell et al 3.
Wilson, Chenault et al 4-C, 4-D, 5-D.
Wilmot, Bohler et al 2.
Mrs. Carter, Boyd et al 1.
Netherton, Burns et al 1.
Richardson, Clayton et al 2.
Wilmont, Dale et al 6, 7.
Ferguson, Dilday et al 1.
White, Dickson et al 1.
Wilson, Empire G. & F. Co. 1.
Wilson, Featherstone et al 2.
Wilson, Granberry Drilling Co. 1.
Carter, Gwynn et al 4, 2-A.
Parrish, Hardisty et al 1.
Wilson, Jetter et al 1.
Wilson, Johnson et al 1.
Wilson, Kentucky O. Corp. 2.
Parrish, Lane et al 1.
Birdwell, Lynch et al 1.
Parrish, Maer et al 1.
Wilson, Morris et al 1.

Wells Drilling

White, Murchison et al 1.
O'Donnell, Norton et al 1.
Parrish, the Oil Investment Co., 2-B, 3-B.
Parrish, Payne et al 1.
Richardson, Shamrock O. Co. 4.
Wilmont, Sibley et al 5, 6.
Wilson, 66 O. Co. 3.
Mrs. Carter, Staley et al 3, 4.
Wilson, Stone et al 1.
Farmer, Sun O. Co. 3.
Richardson, Swastika O. Co. 9.
Wilmont, Underwood Drilling Co. 2.

Wells drilling, 44; rigs, 17; total, 61.

STEPHENS COUNTY

Rigs

Corbitt, Cox Consolidated O. Co. 2.
Hill, Mid-Kansas O. & G. Co. 12.
Richardson, Mid-Kansas O. & G. Co. 3.
Atkins, Prairie O. & G. Co. 15.
Sweeney, Rochelle et al 1-A.
Williams, Spratt et al 1.
Dodd, Haile and Knight 1.
Bruce, Price et al 2.
Jones, Rosser et al 5.
Davis, Scott et al 2.
Henderson, Sinclair O. & G. Co. 5.

Wells Drilling

Cobb, Critten et al 1.
Cougher, Mid-Kansas O. & G. Co. 2.
Hill, McClain et al 1.
Crudington, Pierce et al 1.
Martin, Texas Con. O. Co. 5.
Martin, Weekly et al 2.
Wild, Humble O. & R. Co. 1.
Brown, Magnolia Pet. Co. 4.
George, Magnolia Pet. Co. 2.
Rush, Magnolia Pet. Co. 12.
Walker, Magnolia Pet. Co. 4.
Boyett, M. & M. O. Co. 1.
Brown, Prairie O. & G. Co. 1-B.
Newham, Royal Palm O. Co. 1.
Davis, Scott et al 1.
W-C, Walker & Caldwell 14.
Wells drilling, 16; rigs, 11; total, 27.

EASTLAND COUNTY

Rigs

Ross, Dorothy O. Co. 1.
Edison, Knox-Lewis O. Co. 2.
Ross, Magnolia Pet. Co. 4.
Hatton, Clayton et al 1.
White, McBride O. Co. 1.
Lewis, Rosenfield et al 1.

Wells Drilling

Collins, Ablon et al 1.
Steele, Clayton et al 1.
Miller, Eby et al 5.
Shugart, Gholson et al 2.
Mahan, Harrell et al 1.
Merrill, the Humble O. & R. Co. 3.
Harris, Kokomo O. Co. 1.
Rogers, Magnolia Pet. Co. 3-A.
Ross, Magnolia Pet. Co. 3.
Westmoreland, Magnolia Pet. Co. 14.
Hightower, Panhandle O. & R. Co. 5.
Rio Bravo, Clayton et al 1.
Johnson, Daugherty et al 1.
Ray, Gordon Pet. Co. 1.
Harrington, Mayhew et al 1.
Parrock, The Nixon O. Co. 2.
Walker, Root et al 1.
Brunett, Rosenfield et al 1.
Lewis, Texas Development Co. 1.
Wells drilling, 19; rigs, 6; total, 25.

YOUNG COUNTY

Rigs

Hughes, Associated O. Syndicate 1.
Andrews, Donohue et al 1.
Wilde, Logan et al 1.
Logan, McKenzie et al 1.
Whittenburg, Mann et al 8.
Bower, Shamrock O. Co. 3-A.

Wells Drilling

Hankins, Bullington et al 1.
Moren, Calmo O. Co. 3.
Hockaday, Gulf Prod. Co. 2.
Bullock, Holcomb et al 1.
Carter, McGuire et al 1.
Gibson, Mid-Kansas O. & G. Co. 1.
Moren, Mid-Kansas Oil & G. Co. 1.
Hughes, Dudley Miller 1.
Benson, Smith et al 1.
Carter, Snowden et al 1.
McLaren, Weekly et al 3.
Graham, Whitehead et al 1.
Wells drilling, 12; rigs, 6; total, 18.

WILDCATS

SHACKELFORD COUNTY

Rigs

Poindexter, the Landreth O. Co. 11, 13.

Wells Drilling

Parrish, Beggs et al 1.
Elliott, Humble O. & R. Co. 1.
Poindexter, Humble O. & R. Co. 1-E.
Lynch, the Landreth O. Co. 2.
Poindexter, the Landreth O. Co. 14.

BROWN COUNTY

Rigs

Windham, Infield Pet. Co. 5.
Armstrong, McCamey et al 1.

PALO PINTO COUNTY

Rigs

River Bed, Scott et al 2.

Wells Drilling

Slemmons, Pender et al 1.
Robinson, Texas & Pacific C. & O. 1.
Thomas, Thomas et al 1.
Costello, Costello et al 1.
Dalton, Dalton O. Co. 5.
Jones, Jones et al 1.
Costello, Simms O. Co. 1.
Holt, Singleton et al 1.
Welden, Zada Bell O. Co. 1.

MITCHELL COUNTY

Rigs

Miller, the California Co. 1.

Wells Drilling

Badgett, Fensland O. Co. 1.
Badgett, Kelsay et al 1.
Morrison, Reilly et al 1.
O'Neil, Sloan et al 1.
Smart, Sloan et al 2.
Morrison, Underwriters Pro. & Ref Co. 5.

CLAY COUNTY

Rigs

Worsham, Gulf Pro. Co. 3.
Stine, Cumley et al 1.
Dean, Pipes et al 1.

Wells Drilling

Boddy, Gulf Prod. Co. 1-A.
Scott, Knox and Finley Dev. Co. 1.

COOKE COUNTY

Wells Drilling

Davis, Bigg Indian O. Co. 1.
Jones, Red River Drilling Co. 1.

MONTAGUE COUNTY

Wells Drilling

Gist, The Texas Co. 1-A.
Beasley, Amarado O. Co. 1-A.
Benton, Gulf Prod. Co. 1.
Maddox, Humphreys Oil Co. 3.
Howard, Mascho O. Co. 1.
Crenshaw, Texon O. Co. 1-A.

THROCKMORTON COUNTY

Wells Drilling

Ray, Monroe Prod. Co. 1.

ARMSTRONG COUNTY

Wells Drilling

J. A. Ranch, Magnolia Pet. Co. 1.

CARSON COUNTY

Wells Drilling

Burnett, Gulf Prod. Co. 3-A.
Sandford, Humphreys O. Co. 1.

GRAY COUNTY

Wells Drilling

Saunders, The Texas Co. 1.

DALLMAN COUNTY

Wells Drilling

James, Hollerman et al 1.

HUTCHINSON COUNTY

Rigs

Johnson, Whittacre et al 1.

Wells Drilling

Sandford, Coline O. Co. 1.
Johnson, Humphreys O. Co. 1.
Johnson, Montgomery O. Co. 1.
Smith Capers, McGee et al 1.

POTTER COUNTY

Wells Drilling

Masterson, P. & R. Oil Co. 2.
Bivens, P. & R. Oil Co. 1-A, 2-A.

WHEELER COUNTY

Wells Drilling

Sheldon, Tyrell et al 1.
Wells drilling, 44; rigs, 10; total, 54.

N. LOUISIANA-ARKANSAS

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Smackover District, Union Co.	48	30,890	12	0	22	54	86
Ouachita Co.	41	8,345	1	0	23	42	65
Stephens Dist., Columbia and Ouachita Counties	15	579	0	0	8	3	11
Bellevue Dist., Bossier Parish	11	135	3	1	2	7	10
Caddo	6	361	1	0	2	5	7
Claiborne	5	128	3	0	1	1	2
De Soto	3	0	3	0	0	0	0
Red River	1	0	1	0	0	4	4
La. Wildcats	20	0	3	17	16	38	54
Ark. wildcats	2	0	2	0	9	17	26
Total Nov.	152	40,438	29	18	94	171	265
Total Oct.	146	31,320	22	22	107	210	317
Difference	6	9,118	6	4	13	39	52

SMACKOVER DISTRICT
UNION COUNTY
Completions

8-17-14 Amazon, Acme Oil Co. 1..... dry
8-16-15 Berry, Anderson et al 1 150
8-16-15 Berry, Anderson et al 2 200
6-16-15 Ferguson, Arkansas Nat. Gas Co. 1 ..... dry

17-16-15 J. Murphy, Barnsdale & Foster 2 650
17-16-15 Murphy, Caldwell et al 1 500
1-18-16 Trimble, Constantin O. & R. Co. 2 ..... dry
14-16-15 Giller, Crawford & Sebastian 6 40
17-16-15 Harrell, Crosbie, J. E. 4 250
17-16-15 Harrell, Delukie et al 2 600
18-16-15 McKinney, Dunn Oil Co. 1 150
20-16-15 Hicks, Federal Pet. Co. 2.... 65
15-16-15 Wells, Federal Pet. Co., W-5.. 150
7-16-15 Thompson, Gladys Belle Oil Co. 1 90
3-16-15 Graves, Hall & Gann 2 1200
21-16-15 Jameson, Higgins O. & R. Co. 275
11-16-15 Giller, Hollyfield et al 4 400
14-16-15 E. G. Murphy, Humble O. & R. Co. 1 6000
10-16-15 Pate, Humble O. & R. Co. 3 .. 175
17-16-15 Massey, Humphries Oil Co. 1.. 400
1-16-17 Hodges, King & Timberlake 1. 1#
33-18-17 Moore, Lemon et al 1..... dry
3-16-15 Roper, Livingston et al 2..... 200
1-16-17 Neely, Magnolia Oil Co. 1..... 20
17-17-14 Moody, Marr Oil Corp. 2..... 200
71-16-15 J. Murphy, J. Marr 1..... 800
33-15-16 Johnette, Morris Drg. Co. 4.... 15
33-15-16 Johnette, Morris Drg. Co. 5.... 10
33-15-16 Johnette, Morris Drg. Co. 6.... dry
5-16-15 Oran, Morris Drg. Co. A-2.... dry
3-16-15 Graves, Oil Operators Trust 3. 60
23-16-15 Alphin, Page et al 1.....15000
4-16-16 C. L. Saxon, Pan-Am. Oil Co. 1 dry
17-16-15 Harrell, Penquin Oil Co. 3.... 600
10-16-16 Crowder, Picknell, Frank T. 1 dry
7-16-15 Tatum, Plateau Oil Co. 1..... dry
7-16-15 Tatum, Plateau Oil Co. 3..... dry
15-16-15 Craig, Pure Oil Co. 2..... 115
32-15-16 Saxon, Smitherman & McDonald A-2 250
3-16-15 Hays, Sun Co. 5..... 200
3-16-15 Hays, Sun Co. 6..... 300
15-16-16 McElroy Sun Co. 1..... dry
14-16-15 E. G. Murphy, The Texas Co. 1 115
17-16-15 Vestal, Tidal-Osage Oil Co. 1..1500
4-16-16 Saxon, Wells et al 1..... 150
33-15-16 Wilson, Nye 1..... 15
4-19-14 Ogden, Winger et al 1..... dry
8-18-14 Van Hook, Woodley et al 6.. 35

Wells completed 48
Production 30,890
Dry 12

OUACHITA COUNTY—SMACKOVER DIST.
Completions

31-15-16 Patton, Ark. Nat. Gas Co. 1.. 700
32-15-16 Patton, Bashara et al 1..... 300
31-15-16 W. F. Patton, Bashara et al 1. 220
30-15-16 Fee, Burch, Walker 1..... 175
30-15-16 Shirey, ElDor-Union Oil Co. 1. 200
36-15-17 Smith, ElDor-Union Oil Co. 1. 100
27-15-16 J. A. Cramer, Forest Oil Co. 5 125
28-15-16 Hardin, Forest Oil Co. 2..... 60
28-15-16 Hardin, Forest Oil Co. 3..... 25
29-15-16 Minore, Forest Oil Co. 1..... 75
28-15-16 Mullins, Forest Oil Co. 10..... 90
27-15-16 Mullins, Forest Oil Co. 13..... 150
31-15-16 Patton, Gray-Burg Oil Co. 2.. 300
31-15-16 Patton, Gray-Burg Oil Co. 3.. 300
32-15-15 Goodwin, Gulf Ref. Co. B-4.. 15
19-11-16 Goodgame, Hall et al 1..... dry
30-15-16 Fee, Hines, J. L., 1..... 250
27-15-16 Reynolds, Houston Oil Co. 1.. 300
20-15-16 Myar, Hunt et al 2..... 400
20-15-16 Myar, Hunt et al B-1..... 150
29-15-16 Fincher, Johnson et al 2..... 100
29-15-16 Shirley-Berg, Magnolia Prod. Co. 1..... 15
32-15-16 Patton, Magnolia Pet. Co. 1.. 300
31-15-16 Smith, Magnolia Pet. Co. 2.... 175
24-15-17 Mengis, Mengis Oil Co. 2..... 50
34-15-15 Snyder, Murphy Tst. 2..... 800
30-15-16 Watts, Pace Tst. 1..... 150
25-15-17 Wells, Reynolds et al 1..... 150
32-15-16 Myar Est., Riggs Drg. Co. 1... 500
28-15-16 Hildebrand, Simms Oil Co. 3.. 100
30-15-16 Lagrone, Smith Ref. Co. 1.... 180
30-15-16 McRae, Smith Ref. Co. 3..... 200
30-15-16 Myar Est., Smith Ref. Co. 1... 350
30-15-16 Myar Est., Smith Ref. Co. 4... 250
30-15-16 Myar Est., Smith Ref. Co. 2... 300
30-15-16 Fee, Solmson et al 1..... 10
33-15-15 Griffin, Standard of La. 1..... 50
29-15-16 Solmson Est., Standard of La. 1 200
31-15-16 Patton, Sun Co. 1..... 200
30-15-16 Fee, Sure Oil Co. 1..... 180
22-15-16 Patton, V. K. F. Drg. Co. 1... 150

Wells completed 41
Production 8345
Dry 1

STEPHENS FIELD
COLUMBIA COUNTY
Completions

24-15-20 Milner, Atlantic Oil Prod. Co. 3 15
24-15-20 Wepfer, Haskell et al 6..... 40
24-15-20 Wepfer, Haskell et al 7..... 50
23-15-20 Adkins, Hude & Aarens 4.... 35
25-15-20 Hammond, Magnolia Pet. Co. 2 30
24-15-20 Milner, Shaffer O. & R. Co. E-4 35
24-15-20 Milner, Turley & Tate 3..... 40
23-15-20 Milner, Wingfield et al 3..... 40

Wells completed 8
Production 285

OUACHITA COUNTY
Completions

30-15-19 Jones L., Ark Inv. Oil Corp. 1 77
18-15-19 Wesley, Ark. Inv O. Corp. 2.. 52
19-15-19 Hamilton, Mutual Oil Co. 4.. 50
29-15-19 Grayson, Ohio Oil Co. 1..... 20
18-15-19 Brown, Shaffer O. & R. Co. E-4 35
30-15-19 L. Jones, Standard of La. 1.. 20
31-15-19 W. Jones, Standard of La. 1.. 40

Wells completed 7
Production 294

BELLEVUE FIELD
BOSSIER PARISH
Completions

15-19-11 Bliss & Weatherbee, Bliss & Weatherbee A-9 20
15-19-11 R. B. & W., Humble O. & R. Co., 21 20
15-19-11 R. B. & W., Humble O. & R. Co. 24 5
23-19-11 Strange, Olmstead et al 7..... 25
15-19-11 Scanland, R. O. Ray 18..... 50
22-19-11 Kendrick, Standard of La. B-7 dry
14-19-11 McKinney, Standard of La. 2.. 7
10-19-11 B. & W., Standard of La. 5.. 8
27-19-11 Catlett, Webb et al 1..... dry
9-19-11 McVey, Wellburn & Deputy 1.. dry
30-23-12 Bolinger, Sales & Walker 3... gas

Wells completed 11
Production 135
Gas 1
Gas production 5,000,000

CADDO PARISH
Completions

13-21-15 Robertshaw, Dixie Oil Co. 53.. 280
13-21-15 Robertshaw, Dixie Oil Co. 55.. 10
13-21-15 Robertshaw, Dixie Oil Co. 58.. 6
34-23-16 French, La-Tex Con. Oil Co. 1 55
14-21-15 Murry, McGoldrick et al 6.... 10
9-20-15 Alexandria, Vitek Oil Co. 1... dry

Wells completed 6
Production 361
Dry 1

CLAIBORNE PARISH
Completions

20-21- 8 Aubrey, Block Oil Co. 1..... dry
35-22- 7 McKenzie, El-Dor Chief Oil Co. 1 ..... dry
28-23- 8 Goree, Fortuna Oil Co. 1..... dry
24-23- 8 J. L. Garrett, La. Oil Ref. Corp. 3 71
30-21 7 Shaw-Palmer, Standard of La. 3 57

Wells completed 5
Production 128
Dry 3

DE SOTO PARISH
Completions

36-13-14 Roscoe, Phillips & Garret 1.. dry
25-13-13 Jenkins, Pollock et al 1..... dry
30-14-13 Tompkies, Snell and Kennebrew 1 ..... dry

Wells completed 3
Production 0
Dry 3

RED RIVER PARISH
Completions

2-14-12 Fee, LeGrand et al 2..... dry

LOUISIANA WILDCATS
Completions

Morehouse Parish—
22-20-5e Plemmons, Feazel et al 2..... gas
3-19-5e Fee, Ladell et al 13..... gas
27-20-5e Fee, Ladell et al 14..... gas
34-20-5e Snyder, Morris Trst. 1..... gas
29-21- 5 Spyker, Southern Carbon Co. 10 ..... gas

Ouachita Parish—
4-19-5e Lister, Booze Trst. 1..... gas
8-19-5e Wilson, Cons. Carbon Co. 1.... gas
28-19- 5 Fee, Monroe Carbon Co. 1..... gas
5-19- 4 Lieber, Ouachita Nat. Gas Co. 2 ..... gas
28-19- 5 Hare, Owens et al 1..... gas
43-20-5e Fairbanks, Southern Carbon Co. 5 ..... gas
15-19-5 Puckett, Standard Carbon Co. 1 gas
31-19- 5 Winchit, The Texas Co. 1.... gas
3-19- 5 Balkun, Union O. & P. Co. 2.. gas
32-19- 5 Winchit, Ziegen & Clark 1.... gas

Lincoln Parish—
20-20-2w Huffman, Bob Church Pool 1 dry

Webster Parish—
14-21-10 S. J. Merritt, Oil Fields Gas Co. 1 ..... gas
5-22-10 J. H. Merritt, The Texas Co. 1 dry
27-23-10 Pardee, Oilfields Gas Co. 1.... gas
8-18-10 Longino, Wingfield et al 1.... dry

Wells completed 20
Dry 3
Gas 17
Gas production 212,000,000

ARKANSAS WILDCATS
Completions

Nevada County—
3-14-21 Waters, Owens et al 1..... dry
10-14-21 Waters, Smitherman & McDonald 2 ..... dry
Wells completed 2
Dry 2

SMACKOVER DISTRICT
UNION COUNTY
Rigs

4-19-15 Cullens, Ark. Nat. Gas Co. 6.
17-16-15 Harrell, Ark. Pipe Line & Nav. Co. 4.
25-16-16 Burton, Dickson et al 2.
18-17-14 Polk & Ezell, Donoway et al 3.
7-17-14 Tufts, Finn & Ball 1.
9-16-15 T. C. Murphy, Gulf Ref. Co. 10.
18-17-14 Polk & Ezell, Gulf Ref. Co. 1.
5-16-16 Lewis Werner, Gulf Ref. Co. 12.
14-16-15 Murphy, Higgins O. & R. Co. A-3.
7-17-14 Stevens, Hudson & Brooks 1.
14-16-15 E. G. Murphy, Humble O. & R. Co. 2.
15-16-15 F. G. Murphy, Humble O. & R. Co. 3.
14-16-15 E. G. Murphy, Humble O. & R. Co. 4.
7-16-15 T. G. Murphy, Imperial Oil & Gas Co. 1.
16-16-15 McRea, McPherson Oil Co. 3.
5-16-15 Flenniken, Morris Drg. Co. 7.
7-16-15 Lawton, Murphy Trustees 1.
8-16-15 Billyiu, Oil Operators Trust 3, 4.
4-16-15 Hays, Oil Operators Trust 1.
8-16-15 G. E. Murphy, Oil Operators Trust 2.
23-16-15 Alphin, Page et al 1.
6-16-15 Ferguson, Parish Oil Co. 2.
23-16-15 E. G. Murphy, Sam Richardson et al 1.
7-17-14 Stevens, Russell et al 1.
11-16-15 Alphin, Standard of La. 1.
5-16-16 C. L. Saxon, Standard of La. C-1.
5-16-16 Saxon, Standard of La. B-3.
7-17-14 Tufts, Stock et al 1.
7-17-14 Tufts, Steen et al 1.
17-16-15 Smith, Thorpe et al 1.
3-16-15 Lyell, Wells et al 2.

Wells Drilling

17-16-15 J. Murphy, Barnsdale & Foster 3.
2-19-15 Snyder, Berfet et al 1.
19-17-14 Cranston, Big Four Oil Co. 2.
9-18-12 Tuberville, Big Four Oil Co. 1.
17-16-15 Burns, Browder et al 1.
19-15-16 Smith, Burton et al 1.
17-16-15 Harrell, Chew et al 1.
7-18-15 Hinson, Constantin O. & R. Co. 3.
17-16-15 Harrell, Crosby, J. E., 1.
1-16-17 McGraw, Estes et al 1.
22-16-15 W. H. Murphy, Federal Petroleum Co. 1.
28-17-12 Union Sawmill, Federal Petroleum Co. 2.
28-15-16 Mullins, Forest Oil Co. 3.
23-18-14 Robinson, Garrett et al 1.
16-16-15 T. C. Goodwin, Gulf Ref. Co. 4.
17-16-15 J. G. Murphy, Gulf Ref. Co. 3.
11-19-12 Tule, Harrell et al 1.
21-16-15 Jameson, Higgins O. & R. Co. 2.
2-16-17 Smith, Hildreth, Y. E., 1.
15-16-15 Giller, Humble Oil & Ref. Co. A-3.
15-16-15 B. Goodwin, Humble O. & R. Co. 2.
32-15-16 Saxon, Humble O. & R. Co. 1, 2.
1-16-16 Primm, Hunt et al 1.
8-17-14 Moody, Magnolia Petroleum Co. 5.
7-17-14 Stevens, Mercury Oil Co. 1.
10-19-15 Rogers, Montgomery et al 1.
33-18-14 Gates, Morefield et al 1.
5-16-15 Flenniken, Morris Drg. Co. 1.
7-16-15 Lawton, Murphy Trst. 2.
17-16-15 Murphy, Nat. Gas & P. Co. 1.
1-16-16 Primm, Nat. Gas & P. Co. 1.
18-17-14 Polk & Ezell, Olvey et al 3.
4-16-16 Saxon, Pan-Am. Oil Co. A-4.
10-16-15 L. Lawton, Sam Richardson et al 2.
15-17-16 Dumas, Rooker et al 1.
15-16-15 Wells, Roxana Pet. Co. 4.
11-16-15 Alphin, Standard of La. 10.
22-16-15 Lingelback, Standard of La. 1.
5-16-16 C. L. Saxon, Standard of La. B-1. B-2, C-1.
21-16-12 Little, Stark et al 1.
3-16-15 Hays, Sun Co. 4.
8-16-16 Childs, Tarver et al 1.
22-16-15 J. T. Murphy, The Texas Co. 2.
21-16-15 F. G. Johnson, The Texas Co. 1.
17-16-15 Vestal, Tidal Osage Oil Co. 2.
10-16-15 L. Lawton, Vaughn & Gray 2, 3.
7-17-14 Lyon, Vag Oil Co. 1.
6-16-15 McClannahan, Vitek Oil Co. 3.
6-16-16 O. A. Rice, Weatherbee et al 1.
8-18-14 Van Hook, Woodley et al 7.

Shut Down

17-16-15 Harrell, Barnsdale & Foster 1.
34-17-12 Clark, Bondurant et al 1.
2-18-12 Stegel, Bondurant et al 1
13-16-15 Giller, Crawford & Sebastian 2.
25-16-16 Burton, Dickson et al 1.
23-16-15 Goodwin, Dillon et al 1.
7-17-14 Tufts, Donoway et al 1.
9-16-15 T. C. Murphy, Gulf Ref. Co. 2.
15-16-16 Epps, Houston Oil Co. 1.
34-16-14 Matthews, Isola Oil Trst. 1.
6-16-16 Goff, John Knox 1.
13-16-17 Campbell, Magnolia Pet. Co. 2.
33-15-16 Meakin, Magnolia Pet. Co. 2.
17-16-15 Murphy, McPherson Oil Co. 1.
5-16-15 Flenniken, Morris Drg. Co. 4, 5.
4-16-16 C. L. Saxon, Pan-Amn. Oil Co. B-1.
30-16-15 Burton, Rica Oil Co. 1.
9-19-15 Cabirass, Richardson et al 1.
28-16-14 Long, Roy et al 1.
5-16-16 Saxon, Smitherman & McDonald 3.
12-16-17 Rhodes, Steele Oil Co. 1.
16-18-13 Norman, Strong Oil Corp. 1.
6-16-16 Holloway, Weatherbee et al 1.
6-18-14 Beam, T. J. Woodley 1.
Rigs, 32; wells drilling, 79; total, 111.

OUACHITA COUNTY—SMACKOVER DIST.
Rigs

30-15-17 Smith, American Trst. Co. 1.
34-15-15 Snyder, Ark. Nat. Gas Co. 4.
19-15-16 Code, Bailey et al 1.
4-12-18 Doc Bradford, Block Oil Co. 1.
25-15-17 LaGrone, Bray-Hawthoren 3.
29-15-16 Minor, Forest Oil Co. 2.
29-15-16 McElroy, Garrett et al 1.
30-15-16 Watt, Giles et al 2.
20-15-16 Patton, Grayburg Oil Co. 4.
31-15-16 Patton, I. K. Hamilton 1.
32-15-16 Patton, Magnolia Pet. Co. 2.
31-15-16 Smith, Magnolia Pet. Co. 3.
25-15-17 Smith, J. D. Reynolds 1.
30-15-16 Fee, Smith Ref. Co. 4.
30-15-16 McRae, Smith Ref. Co. 1.
30-15-16 Myar Est., Smith Ref. Co. 3.
31-15-16 Patton, Smith Ref. Co. 3.
29-15-16 Solmson, Standard of La. 3.
30-15-16 Townsite, Stumpf & Bedell 1.
32-15-15 Umstead, Standard of La. 5.
34-15-15 Johns, Sure Oil Co. 2.
32-15-16 Patton, V. K. F. Drg. Co. 4.
32-15-16 T. C. Patton, Woodley Pet. Co. 1.

Wells Drilling

31-15-16 Patton, Ark. Nat. Gas Co. 2.
30-15-16 Patton, Ark. Nat. Gas Co. 3.
31-15-16 Patton, Bray-Hawthorne 4.
24-15-17 Barry, Dr. Clarke 1.
30-15-16 Shirey, El Dorado Union Oil Co. 2.
36-15-17 Smith, El Dorado Union Oil Co. 2.
27-15-16 Mullins, Forest Oil Co. 11.
30-15-16 Watt, Giles et al 1.
10-15-18 J. H. Dawson, Gulf Reg. Co. C-1.
29-15-16 Solmson, Gulf Ref. Co. 1.
32-15-16 Patton, Gulf Ref. Co. 1.
31-15-16 W. F. Patton, Gulf Ref. Co. 1.
31-15-16 Patton, Houston Oil Co. 1.
27-15-16 Reynolds, Houston Oil Co. 2.
30-15-16 Solmson, Hunt et al 2.
28-15-16 Hardin, Invaders Oil Co. 4.
21-15-16 Hughes, Johnson, Ernest. 1.
32-15-16 Myar Est., Keene & Woolfe 4.
30-15-16 Shirey, Lanier et al 1.
24-15-17 Barry, Lewis & Clark 3.
29-15-16 McElroy, Majestic-Smackover Oil Co. 1.
36-15-16 Horton, Metric Oil Co. 3.
28-15-16 Hardin, Miller et al 3.
27-15-16 Mullins, Morris Drg. Co. 2.
5-16-15 Umstead, Olvey et al 1.
28-15-16 Reeves, Ohio Oil Co. 2.
34-15-15 Snyder, Owenwood Corp. 1.
25-12-16 Eagle Mills Lbr. Co., Walter, Peter 1.
27-15-16 Mullins, Peer Oil Co. 1.
21-11-17 Moline Lbr. Co., Pure Oil Co. 1.
1-16-16 McDonald, Penguin Oil Co. 1.
10-11-16 Henry, Riley et al 1.
30-15-16 McRae, Smith Ref. Co. 2.
29-15-16 Taylor, Snowden & McSweeney 2.
4-16-15 Hardy, Standard of La. 9.
29-15-16 Solmson, Standard of La. 2.
31-15-16 Patton, Sun Co. 2.
3-16-15 F. G. Johnson, The Texas Co. 1
29-15-16 Solmson, The Texas Co. 2.
20-15-16 Minor, Transcontinental Oil Co. 1.
32-15-16 Patton, V. K. F. Drg. Co. 2.
30-15-16 Watt, White et al 2.

Shut Down

30-13-18 Smith, Barry et al 1.
25-15-16 Robertson, Bradstreet et al 2.
20-14-16 Halford, Bray-Hawthorne 1.
30-15-17 Ferris-Burton, Jimmie Cox 1, 2.
27-15-16 Hicks, El Dorado Gas Co. 1.
22-15-17 Riley, Hammond & Giles 1.
5-16-15 Hill, Invaders Oil Co. 1.
27-15-16 Hicks, Leonard Pet Co. 1.
21-13-16 Hargais, Marr Drg. Co. 1.
19-15-16 Bryant, Master Frank 1.
29-15-16 Shirley-Berg, Bob Simmons 1.
31-15-15 F. A. Laney, Simms Oil Co. 2.
32-15-17 Moon, Smackover Crk. Synd. 1.
8-14-12 Graves, Smackover Pet. Co 1.
1-16-16 McDonald, Thompson et al 2.
5-16-15 Goodwin, Wilson Pet. Co. 1.
2-12-18 Garnett, Woods et al 1.
Rigs, 23; wells drilling, 60; total, 83.

STEPHENS FIELD
OUACHITA COUNTY AREA
Rigs

19-15-19 Burris, North Central Texas Oil Co. 2.
32-15-19 Curry, Ohio Oil Co. 1.
30-15-19 Weaver, Standard Oil Co. 4.

Wells Drilling

30-15-19 Webfer, Atlantic Oil Prod. Co. 1.

Shut Down

33-14-19 Allen, Hopkins Trustee 1.
23-15-19 Wesson, Leeper Trustee 1.
Rigs, 3; wells drilling, 3; total, 6.

COLUMBIA COUNTY
Rigs

23-14-20 Jackson, Ark. Osage Oil Corp. 1.
24-15-20 Milner, Atlantic Oil Prod. Co. 4.
14-15-20 Murphy, Atlantic Oil Prod. Co. 1.
24-15-20 Milner Church, Hoffman & Rooney 1.
13-15-20 Adkins, Shaffer Oil & Ref. Co. S-2.
Total rigs, 5.

Wells Drilling

24-15-20 Buffington, Pete Hoffman 1.
23-15-20 Milner, Wingfield et al 4.

McClannah

30-19-18 Haynes, Hosey-McDonald 1.
20-16-18 Watts, Miller et al 1.
35-18-19 Duffer, Smith & Compton 1.
Rigs, 5; wells drilling, 5; total, 10.

BELLEVUE FIELD
Rigs

15-19-11 Roy, Bliss & Weatherbee, Humble Oil & Refining Co. 24, 25, 26.

Wells Drilling

15-19-11 Bliss & Weatherbee, Bliss & Weatherbee A-10.
15-19-11 Roy, Bliss & Weatherbee, Humble Oil & Ref. Co. 20.
10-19-11 Elston, National Oil Co. 12.
23-19-11 Strange, Olmstead et al A-16.
15-19-11 Scandland, R. O. Roy 22, 23.
10-19-11 Bliss & Weatherbee, Standard Oil Co. 9.

Shut Down

15-19-11 Roy, Bliss & Weatherbee, Humble Oil & Ref. Co. 18.
27-19-11 Catlet, Pope et al 1.
Rigs, 3; wells drilling, 9; total, 12.

CADDO PARISH
Rigs

27-16-14 Alexander & Ledbetter, Crude Oil Co. 1.
30-19-15 Nickerson, Matson et al 1.

Wells Drilling

15-18-16 Sharp, Brewer & Sewall 1.
13-21-15 State, Dixie Oil Co. 2.
14-21-15 Robertshaw, Fortuna Oil Co. 18.
24-20-15 Youree-Randolph, Humble Oil & Ref. Co. 1.
32-21-15 Brown Fee, Munslow Oil Co. 1.

Shut Down

5-20-15 Thigpen, Fortuna Oil Co. 10.
23-21-15 Hanzen Oil Co., Glassell et al 1.
11-16-14 Mitchell, Mitchell Oil Co. 1.
34-23-15 Robinson, Myra Oil Co. 1.
12-21-15 Lyon, Old Settlers Oil Co. 5.
3-20-15 Green, St. Louis Caddo Oil Co. 1.
Rigs, 2; wells drilling, 11; total, 13.

CLAIBORNE PARISH
Rigs

22-19- 5 Fields, Forest Oil Co. 1.

Wells Drilling

10-23- 7 Teague, Ohio Oil Co. 1.

Shut Down

28-20- 6 Craighead, Cox et al 1.
15-23- 4 Brinkley, Price Harrell 1.
12-23- 4 Cooper, Mitchell et al 1.
17-22- 5 Rainach, Triangle Drilling Co. 1.
Rigs, 1; wells drilling, 5; total, 6.

DE SOTO PARISH
Shut Down

11-11-16 Bland, De Soto Oil & Gas Co. 1.

RED RIVER PARISH
Rigs, none.

Wells Drilling

7-14-10 Welch, Caldwell et al 1.
7-12-10 Pugh, Fortuna Oil Co. 58.
24-12-11 Armistead, Fortuna Oil Co. 16.
10-12-10 Fletcher, U. S. Drilling Co. 2.

Shut Down

13-12-10 Marston, Coushatta Syndicate 1.
Rigs, 0; wells drilling, 5; total, 5.

LOUISIANA WILDCATS
Rigs

24-18- 7 Durett, Smith et al 1.
6-18- 5 Harrell, Smith et al 1.
12-18-12 Freeman, Hoover et al 1.
29-23-11 Bollinger, Oil Field Gas Co. 1.
25-18- 1 Simms, Gault & Greer 1.
35-20- 2 Colvin, Helm & Egger 1.
15-20- 5 Rogers, Morris Trustee 1.
17-20- 5 Spyker, Southern Carbon Co. 11.
28-19- 5 Fee, Peerless Carbon Co. 2.
27-19- 5 Fee, Southern Carbon Co. 25.
12-19- 4 Kerr, United Oil & Gas Prod. Co. 1.
19-23- 1 Green, Davidson & Palmer 1.
17-23- 2 Clarke, Woodard & Clarke 1.
26-21- 9 Doles, O'Brien et al 1.
15-21-10 Hodges, Snyder et al 2.
14-21-10 Merritt, Triangle Drilling Co. 1.

Wells Drilling

21-17- 8 Leona Scott, Standard Oil Co. 1.
19-16- 6 Bodcaw Lbr. Co., Ohio Oil Co. 1.
18-16-11 Montgomery, George O. Baird 2.
18-19-13 Vance, Perkins et al 2.
22-17-12 Fee, Skannell et al 1.
23-18-11 Jones, Sneed et al 1.
20-10- 2 Urania Pet. Co. 2.
27-20- 3 Colvin, Four Creek Oil Co. 1.
28-20- 5 Oden, Consolidated Oil Co. 1.
13-20- 4 Perry, Cronin & McKenzie 2.
21-20- 5 Fee, Ladel et al 16.
20-20- 5 Plemmons, Morris Trustee 1.
28-20- 5 White, Morris Trustee 1.
22-19- 5 Flournoy, Chester Carbon Co. 1.
8-19- 5 Richie, Consumers Gas Co. 2.
20-19- 5 Hancock, Cosmos Carbon Co. 2.
35-20- 4 Cole, Fortuna Oil Co. 1.
54-17- 3 Dixie Lbr. Co., Haynes et al 2.
31-19- 5 Collins, Hosterman et al 1.

22-30- 5 Fee, Ladel et al 17, 18.
16-30- 5 Fee, Magnolia Carbon Co. 1.
16-30- 5 Fee, Southern Carbon Co. 24.
27-19- 5 Fee, Southern Carbon Co. 6.
43-20- 5 Fairbanks, Southern Carbon Co. 6.
4-19- 5 Fee, Texas Louisiana Prod. Co. 3.
23-19- 5 Gibbs, The Texas Co. 3.
23-19- 4 O'Neal, The Texas Co. 3.
6-18- 5 West Va., West Virginia Oil & Gas Co. 2.

22-22- 1 Newson, Collins & Woodley 1.
30-19- 1 Hamilton, Empire Gas & Fuel Co. 1.

13-23- 1 Security Trust, Love Bros. 1.
17-23- 1 Clark, Union Parish Drilling Co. 3.
29-21- 4 Union Sawmill Co. Union Power Co. A-5.

22-21- 4 Union Sawmill Co., Union Power Co. A-6.

21-21- 4 Union Sawmill Co., Union Power Co. A-7, A-8.

13-21-10 Hope Estate, Oil Field Gas Co. 1.
24-23-10 Martin, Ohio Oil Co. 1.
6-18-10 Anders. Palmer & Blunt 1.

Shut Down

3-22-12 Bolinger, Atlas Drilling Co. 1.
14-16-13 Simpson, Davis Burch 3.

15-23-14 Bolinger, Tarver Bros. Pet Co. 1.
4-18-11 McGuffin, Zinc et al 1.
6-20- 3 McKay, Middle Fork Syndicate 1.
26-20- 5 Perry, McKenzie et al 1.

3-18- 5 West Va. Tmbr. Co., Atlas Oil Co. 2.

7-20- 5 Michim, Ziegen et al 1.
7- 7-12 Bowman Hicks, Brown et al 1.
16-17-12 Bowman Hicks, Brown et al 7.
12- 4-13 Antony, Collins et al 1.
13- 4-13 Glauque, Collins et al 1.
23- 9-11 Raines, Gladys Belle Oil Co. 1.
8- 6-13 Long Bell Lbr. Co. 1.
6-23- 3 Brown, Gardner et al 2
23-23- 3 Rogers, Price et al 1.
17-19-10 Hudson, Hudson et al 1.
29-21-10 Miller, Palmer Corp. 1.
Rigs, 16; wells drilling, 56; total, 72.

ARKANSAS WILDCATS

Rigs

31- 7-20 Wright, Rushville Trustee 1.
8- 9-20 Clark, Vitek Oil Co.
12- 8-12 Wilson, Clark & Melat 1.
22- 7-12 Taylor, Clark & Melat 1.
9-11-26 Haffke, Columbus-Hope Oil Co. 1.
22-14-28 Gillespie, Munn Oil & Gas Co. 1.
15-14-21 Blake, Ames et al 1.
36-10-23 McCain, Arkrado Oil Co. 1.
10-14-21 Womack, Smitherman-McDonald 2.

Wells Drilling

15- 8-22 Wilson, American Drilling Co. 1.
10-12- 7 Wilson, Monticello Ridge Oil Co. 1.
27-12- 8 Martin, W. H. Rhodes et al 1.
26- 5-12 Prague, Parr Oil Co. 1.
24-11-25 King, Columbus-Hope Oil Co. 2.
17-11-25 Nichols, Myers et al 1.
36-12-27 Adams, G. W. Simmons, Trustee 1.
15-13-29 Goodwin Tbr. Co., Gaines et al 1.
10-11-31 Hawkins, Johnson et al 1.
12-15-22 C. D. Perry, Burnnam et al 1.
10-12-21 Westmoreland, Day Trustee, 1.
10-14-21 Womack, Dixie Oil Co. 2.
3-14-21 Waters, Owens et al 1.
10-12-20 Henry, Prescott Oil Co. 1.
13-14-22 Martin, Steele & Sandlin 1.
14-13-20 Blakely, Transcontinental Oil Co. 1.
9-13-20 Moore & Martin, Wooten et al 1.

Shut Down

16-11-13 Hearnesberger, Calhoun Oil & Gas Co. 1.
26-16-13 Freeman Smith Lbr. Co., Harris & Bickle 1.
29-12-12 Adams, Vitek Oil Co. 1.
26-10-20 Barringer, Arkansas Oil Co. 1.
22- 8-18 Littlejohn, Littlejohn & Hall 1.
23- 5-23 Langsford, United Pet. Corp. 1.
18-11-11 Word, Stark & O'Mara 1.
23- 8-15 Matlock & Higgs, Conway et al 1.
5-16-16 Taylor, Stahl et al 1.
22-11- 7 Graves, Monticello Ridge Oil Co. 1.
23-13- 6 Fee, Stenke et al 1.
15- 5-12 Steupke, Parr Oil Co. 2.
31- 4-11 Britch, Parr Oil Co. 1.
33-11-26 Ellen, Hackathorne et al 1.
17-12-13 Yates, Orr et al 1.
31- 5- 8 Trimble, Fuller-Draiss 1.
24-19-24 Red River Land Co., Kensaw Pet. Co. 1.
16-15-24 Osborn, Lewisville Syndicate 1.
25-17-24 Renick, Wilcox et al 1.
2-14-21 Allen, Grote et al 1.
29-13-20 Toland Taylor, Red River Valley Oil Co. 1.
32-11-32 Ludlow, Sullivan Oil & Gas Co. 2.
22-15-25 Mann Land & Dev. Co., Central Coast Oil Co. 1.
8-14-27 Adams, Cochran & Ray 1.
33-14-28 Thompson, Kingsley et al 1.
10-14-21 Waters, Ames et al 3 and 4.
31-13-21 Berley, Carter et al 1.
11-12-23 Eaves, Edwards & Anderson 1.
10-14-21 Womack, Smitherman-McDonald 1.
16-14-21 Butcher, Steele & Sandlin 1.
13-13-22 East, Wilson & Oglesby et al 1.
1-10-23 Suckle, Wiseman et al 1
Rigs, 9; wells drilling, 50; total, 59.

GULF COAST

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Batson	2	20	0	0	1	1	2
Blue Ridge .	2	150	0	0	0	3	3
Big Creek..	1	600	0	0	2	2	4
Damon Mnd	2	75	0	1	0	2	2
Edgerly, La.	1	10	0	0	0	1	1
Goose Creek	6	500	1	0	2	6	8
Humble ...	2	285	0	0	0	7	7
Hull	9	3,050	2	0	6	14	20
Jennings, La	2	15	1	0	0	0	0
Markham ...	1	6	1	0	0	3	3
Orange	14	12,825	1	0	3	12	15
Pierce Jct..	1	0	1	0	0	2	2
Spindletop .	0	0	0	0	0	2	2
Saratoga	1	75	1	0	0	2	2
Sour Lake..	1	100	0	0	2	2	4
Somerset	0	0	0	0	0	5	5
Vinton (La.)	6	450	0	1	1	7	8
W. Columbia	5	715	1	0	0	2	2
Luling	7	6,000	0	0	10	39	49
Laredo Dist.	8	795	0	0	6	14	20
Milam Co...	7	77	0	0	4	8	12
Miscellaneous	12	315	7	2	47	144	191
Total Nov.	90	26,057	16	4	84	278	362
Total Oct.	107	26,672	33	3	64	256	320
Difference	17	615	17	1	20	22	42

BATSON

Wells Completed

Trustee, Deutscher Oil 3 5
Paraffin, Ada Bell Oil, 64 15

Wells completed 2
Production 20

BLUE RIDGE

Lee, Oil Production, 1 (wo)..... abd
Boot, Mutual Oil, 1 (did dpr)..... 150

Wells completed 2
Production 150

BIG CREEK

Davis, Gulf Production, 6 (wo)..... 600

Wells completed 1
Production 600

DAMON MOUND

Williamson, Sinclair Oil & Gas 7..... gas
Smith, Humble Oil & Refg. 1 75

Wells completed 2
Production 75
Gas 1

EDGERLY

Fairchilds, Lake Charles Oil 2..... 10

Wells completed 1
Production 10

GOOSE CREEK

Galliard, Gulf Coast-Crown Joint 18.... 35
Smith, Humble Oil & Refg. 52 135
Smith, Humble Oil & Refg. 4 (wo).... 200
Peninsula, Humble Oil & Refg. 26.... s.w.
Tabb, Gulf Prod. 7 (wo) 130
Spillman Island, J. R. Copeland Oil 1 s.w.

Wells completed 6
Production 600
Saltwater 1

HUMBLE

Landslide, Southern Pet. 42 35
Hirsch, Canadian Oil 1 250

Wells completed 2
Production 285

HULL

Dolbear, Republic Prod. 17 (wo)..... 700
Dolbear, Republic Prod. 23 (wo)..... 200
Dolbear, Republic Prod. 41 (wo) 200
Republic, Higgins Oil & Fuel 3 100
Riveire, Link Oil 4 ..... sw.
Abel, Monarch Oil & Ref. E. ..... abd
Harrison, Gulf Production 4 1000
Stengler, Yount-Lee Oil 5 200
Taylor, Humble Oil & Refg. 1 650

Wells completed 9
Production 3050
Abandoned and salt water 2

JENNINGS

Latrielle, The Texas Co. 26 .....abd. sw.
Fee, Coastal Fuel Oil 86 15

Wells completed 2
Production 15
Abandoned 1

MARKHAM

Myers, Rycade Oil 1 ..... sw.

Wells completed and sw. 1

ORANGE

Tillery, Kishi Dev. 1 (dpnd) 1500
Smith-Foreman, Kishi Dev. 2 15
State Land, Rycade Oil 2-A.....1500
State Land, Rycade Oil 2-C.....1200
Chesson, Mutual Oil 7 (wo) 3000
Brown, Sun Co. 2 3500
Winifree, Humble Oil & Refg. 8 (wo).. 400
Chesson, Humble Oil & Refg. 20-B.... 800
Mecom, Monarch Oil & Refg. 1 15
McLean, Brownie Babbitee Oil 5 (wo) 500
Berwick, Orange Pet. 3 75
Chesson, Orange Pet. 5 300
Winifree, Amn. National Oil 1 ..... sw.
Hager, Atlantic Oil Prod. 2 (wo) 20

Wells completed 14
Production 12,825
Salt water 1

PIERCE JUNCTION

Whitehead, Humble Oil & Refg. 3 abd sw.

Completed and abandoned 1

SARATOGA

B-104, Rio Bravo Oil 75

Wells completed 1
Production 75

SOUR LAKE

Fee, The Texas Co. 272 (wo) 100

Wells completed 1
Production 100

VINTON

Gray, Edgerly Petroleum 1 125
McCray, Edgerly Pet. 1 10
Vincent, Texas Joint 3 15
Johnson, Sun Oil Co. 1 (wo) 250
Rescue, Vinton Petroleum 11 ..... gas
Gray, Vinton Petroleum 3 50

Wells completed 6
Production 450
Gas 1

WEST COLUMBIA

Hogg, The Texas Co. 35 (wo) 600
Abrans, The Texas Co. 1 (wo) 15
Smith, Humble Oil & Refg. 1 50
Robinson, Humble Oil & Ref. 1 (dpnd) abd
Wilson, Southern Petroleum 1 (wo) 50

Wells completed 5
Production 715
Abandoned 1

LULING

Merriweather, Walsh et al 4 1000
Walk, Big Gusher Oil 1 50
Fields, Mahlsted-Mooks Oil 1..... 750
Tabor, Royal Oil 7 (dpnd) 400
Hardemann, Caldwell Petroleum 4 300
Mercer, United North & South Oil 4..1500
Hardemann, United North & South Oil 3 2000

Wells completed 7
Production 6000

LAREDO DISTRICTS

———, Magnolia Pet. 2 (dpnd.) 75
———, O'Hern et al 4 150
———, Chico Pet. 2 100
———, Schott Oil 19 100
Wolcott, White et al 1 120
Aviators, Aztec Oil 2 100
———, Laurel Oil 2 (dpnd) 50
———, Weslaco Oil 2 100

Wells completed 8
Production 795

MILAM COUNTY

Nichaus, Bunum et al 3..... 10
Niehaus, Texas Pet. Dev. 4 12
Sterlsky, Freddie Palmer Oil 1 20
Baldridge, Noacke Oil 2 5
Lewis, Lucky &Wilson 1 7
Moody, Lucky & Wilson 1 8
———, Roundtree et al 2 15

Wells completed 7
Production 77

MISCELLANEOUS

Bexar County—
Schaffer, Alamo Gas Co. 1 ..... gas
Trammel, Transcontinental Oil 1 ..... abd

Grimes County—
Ruth, Cuthbert et al 1 ..... gas

Galveston County—
High Island, Cox et al 1 5
Mott, Magnolia Pet. 1 ..... abd

Harris County—
Hockley, Warren, Texas Exploration 13 10

Liberty County—
South of Liberty, South Dayton Oil 1 dry

Live Oak County—
Cox, South Texas Dev. 2 200

Reeves County—
Oates, Los Pecos Syn. 1 ..... abd
Hankey, Pecos Trans. Co. 1 ..... abd
Valley, Los Angeles Synd. 1 ..... abd
Tatum, Tatum Lease Synd. 1 ..... abd

Wells completed 12
Production 315
Gas 2
Dry and abandoned 7

RIGS AND WELLS DRILLING

BATSON

Hooks, Sun Oil Co. 1.

Wells Drilling

Hodges, Kirby Petroleum, 2 sd.
Rigs, 1; wells drilling, 1; total, 2.

BIG CREEK

Rigs

Davis, Gulf Prod. 9.
Wheat, Gulf Prod. 7.

Wells Drilling

Davis, Gulf Prod. 8.
Ahlers, Rich et al 1 dpng.
Rigs, 2; wells drilling, 2; total, 4.

BLUE RIDGE

Wells Drilling

Robinson, The Texas Co. 11.
Booth,, Mutual Oil 2, dpng.
Bute, Mutual Oil 1.
Wells drilling, 3.

DAMON MOUND

Wells Drilling

Becker, Sinclair Oil & Gas 7 (two)
Jackson, Sinclair Oil & Gas 19.
Wells drilling, 2.

EDGERLY

Wells Drilling

Landry, Gibson et al, 1 sd.
Wells drilling, 1.

GOOSE CREEK

Rigs

Hirsch, Gulf Prod. 2.
Smith, Humble Oil & Refg. 53.

Wells Drilling

Chapman-Bryan, Gulf Prod. Co. 6.
Tabb, Gulf Prod. Co. 7.
Tabb, Humble Oil & Refg. 10.
Peninsula, Humble Oil & Refg. 26 dpng.
Galliard, Gulf Coast-Crown 38.
Spillman, J. R. Copeland 1 sd.
Rigs, 2; wells drilling, 6; total, 8.

HUMBLE

Wells Drilling

Bender, Sun Oil Co. 1.
Slaughter, Callahan et al 1, 2.
———, Coastal Oil Fields 1.
Hirsch, Petoit et al 1.
Rosenthal, Thayer Bros. 1.
Landslide, Burley Oil 26.
Wells drilling, 7.

HULL

Rigs

Dolbear, Republic Prod. 72, 74.
Taylor, Yount-Lee Oil 4.
Taylor, Humble Oil & Refg. 2.
Sterling, Humble Oil & Refg. 1.
Lynd, Empire Gas & Fuel 2.

Wells Drilling

Harrison, Gulf Prod. 5-A.
Phoenix, Gulf Prod. 10.
Dolbear, Republic Prod. 59 wo; 75.
Taylor, Yount-Lee Oil 2.
Merchant, Yount-Lee Oil 8 wo.
Merchant, Higgins Fuel Oil 1.
Miller, Monarch Oil & Refg. 2, 3.
Rievere, Link Oil 4.
Taylor, Houston Prod. Co. 2.
Mecom, Mecom Oil, 3 wo.
Carr, Sun Oil Co. 9.
Hannah, Texas-Vacuum Oil 1, dpng.
Rigs, 6; wells drilling, 14; total, 20.

MARKHAM

Wells Drilling

Myers, Rycade Pet. 1 dpng.
Hudson, Rycade Pet. 2.
Newman, Schulter et al 1 sd.
Wells drilling and shut down, 3.

ORANGE

Rigs

B. Peveito, Gulf Prod. 3, 4.
Kishi-Lang, Gulf Prod. 6.

Wells Drilling

Hager Fee, Gulf Prod. 13, 14.
Chesson, Gulf Prod. 4.
Chesson, Humble Oil & Refg. 20-B, dpng.
Hager, Atlantic Oil Prod. 2, dpng.
State Land, Rycade Oil 3-A.
Chesson, Mutual Oil 6, 8.
Winifree, Orange Pet. 5 wo.
Chesson, Orange Pet. 4 wo.
Kato, Sun Oil Co. 1, dpng.
Jackson, Supreme Oil 1, dpng.
Rigs, 3; wells drilling, 12; total, 15.

PIERCE JUNCTION

Wells Drilling

Ritter, Sun Oil Co. 1.
Fitzsimmons, Humble Oil & Refg. 6, dpng.
Wells drilling, 2.

SPINDLETOP

Wells Drilling

McFadden, Rycade Oil 2.
McFadden, Wilson-Broach Co. 3.
Wells drilling, 3.

SARATOGA

Wells Drilling

Lewis, Paggi Bros. 3.
Fee, Rio Bravo Oil 86-B.
Wells drilling, 2.

SOUR LAKE

Rigs

Hardin, Gulf Prod. 37.
Fee, Gilbert Oil 86.

SOUR LAKE

Rigs

Hardin, Gulf Prod. 37.
Fee, Gilbert Oil 86.

Wells Drilling

Cannon, Quinn Oil 1 s. d.
Fee, The Texas Co. 272, dpng.
Rigs, 2; wells drilling, 2; total, 4.

SOMERSET

Wells Drilling

Peeler, Texasco Oil 1.
Hopkins, Wolfe et al 1.
Fuller, Witherspoon Oil 9.
McKinney, Frontier Oil 1.
Schaffer, Alamo Gas 2.
Wells drilling, 5.

VINTON

Rigs

Rescue, Vinton Pet. 12.

Wells Drilling

Starx, Gulf Refg. 36.
Grav, The Texas Co. 23.
Vincent, The Texas Co. Joint 3, dpng.
Lyons, Just Oil & Refg. 2.
Gray, Marrs McLean 5.
Vincent, Edgerly Pet. 1.
Gray, Gulf Coast Oil 5.
Rigs, 1; wells drilling, 7; total, 8.

WEST COLUMBIA

Wells Drilling

Hogg, The Texas Co. 53.
Abrams, The Texas Co. 1, dpng.
Wells drilling, 2.

LULING

Rigs

Dunlap, Armstrong et al 1.
Moore, Jarmon Oil 2.
Herscahp, Universal Oil 1.
Hardeman, United North & South Oil 4.
Tremmel, United North & South Oil 1.
C. Byrd, United North & South Oil 4.
Merriweather, Witherspoon Oil 1.
Purcell, C. W. Patton 1.
Martin, Tindley & Killough 1.
Rios, United North & South Oil 7.

Wells Drilling

Hardeman, Caldwell Pet. 3, 6.
A. Mercer, United North & South Oil 2.
Gilson, United North & South Oil 1.
M. Mercer, United North & South Oil 1.
Marion Mercer, United North & South Oil 1.
Tabor, United North & South Oil 3, 5.
Milton Mercer, United North & South Oil 1.
C. Byrd, United North & South Oil 2, 3.
Guadalupe County, Shanklin, U. N. & S. Oil 1.
Guadalupe County, Engelke, U. N. & S. Oil 1.
Guadalupe County, Manford, United N. & S. Oil 1.
Tabor, Royal Oil 5, 6.
Merriweather, Magnolia Pet. 3, 4, 5, 6.
N. Byrd, Magnolia Pet. 1, 2.
C. Byrd, Magnolia Pet. 2.
Sherrill, Magnolia Pet. 3.
Garcia, Royal Oil 1.
Cole, Thornton-Blackstone Co. 1.
Davis, Texas Trading 1.
Belton, Soda Springs Oil 1.
Proctor, Seals Creek Oil 1.
Hardeman, Sunland Oil 2.
Walker, M. O. Royer, 1 sd.
Cosey, Witherspoon Oil 1.
McKean, Yoakum-Shriner Oil 1.
Hardeman, Yoakum-Shriner Oil 1.
Merriweather, Prairie Lea Oil 2 sd.
Blackstone, Grayburg Oil 1 sd.
Walker, Big Gusher Oil 1.
Henry, C. C. Cannon Oil 1, sd.
Gray, Luling Prod. 3.
Rigs, 10; drilling-shut down, 39; total, 49

LAREDO DISTRICTS

Rigs

Mirando-Schott, Laurel Oil 5.
Mirando, Texical Oil 1.
Mirando-Schott, Carnahan Oil 56, 57.
Garcia, Schott Oil, 20.
Gonzales, Bailey et al 1.

Wells Drilling

Barnsley, Caroline-Tex Oil, 5 dpng.
Garcia, Magnolia Pet. 16, 17.
Cole, Cole Pet. 3 dpng.
Harvey, Barnhart Drg. Co. 1 sd.
Pratt, S. Y. D. Synd. 1 sd.
Vela, Laurel Deep Well Co. 1 sd.
Gates, Leaseholders O. & R. 6, 7, sd.
Chico, Chico Pet. 2 dpng.
Zapata County, Boston-Mirando Oil 1 dpng.
———, C. J. Chandler 1.
Garcia, Nueve Oil 1.
Garcia, Duggan et al 1.
Rigs, 6; wells drilling, 14; total, 20.

MILAM COUNTY

Rigs

Branch, W. C. Jennings 1, 2.
Fee, Roundtree et al 2.
Rockdale, Fritz Fuchs 1.

Wells Drilling

Bremond, Culver et al 1 dpng.
Session, Wallace & Gutherie 1.
Sterlsky, Van Dorn et al 2.
Timmerman, Gutherie et al 2.
Von Goten, Plunkett Oil 1.
Moody, McDonald et al 1 sd.
Watson, Minerva Pet. 4 sd.
Rittig, Bartlett-Minerva Oil 2.
Rigs, 4; wells drilling and shut down, 8; total, 12.

WYOMING FIELDS

Summary of Field Operations

District—	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Big Muddy	0	0	0	6	9	9
Salt Creek	32	11,229	0	52	109	161
Lance Creek ...	2	3,000	0	0	8	8
Warm Spgs., etc.	0	0	0	3	22	25
Big Horn Basin.	2	0	1	4	23	27
Lost Soldier ...	1	0	0	12	47	59
Rock River dist.	1	400	0	1	20	21
Fremont County.	2	0	2	4	30	34
Mule Creek	0	0	0	0	2	2
Osage	1	25	0	3	24	27
Natrona County	1	0	1	1	21	22
Lincoln and Uintah Cos...	0	0	0	4	17	21
Baxter Basin...	0	0	0	2	13	15
Miscellaneous ..	1	15	0	8	44	52
Total Nov.....	43	14,669	4	94	389	483
Total Oct.....	39	10,745	5	109	417	526
Difference ...	4	3,924	1	15	28	43

Gas production, 71,000,000 feet.

MONTANA

Summary of Field Operations

District—	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Cat Creek	3	300	0	2	22	24
Kevin Sunburst.	18	795	5	13	38	51
Miscellaneous ..	1	0	1	5	108	113
Total Nov....	22	1,095	6	20	168	188
Total Oct.....	33	780	14	23	191	214
Difference ...	11	315	8	3	23	26

UTAH

Summary of Field Operations

	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Miscellaneous ...	0	0	0	0	24	24

(Same as October.)

BIG MUDDY

Wells Drilling

8-33-76 Humphreys, Mutual Oil 38.
8-33-76 Crary, Texas Prod. Co. 31.

Shut Down

2-33-76 Fenex, Mutual Oil 4.
15-33-76 Whiteside, Mutual Oil 3.
8-33-76 Humphreys, Mutual Oil 37.
8-33-76 Crary, Texas Prod. 32.
4-32-77 Big Bear Oil.
23-33-76 Northstar Oil.
36-33-76 Pathfinder Oil.
Wells drilling, 9.

SALT CREEK

Rigs

2-39-79 SW¼, Mutual Oil 2-A.
24-40-79 NW¼, Wyo. Asso. 29-AX.
27-40-79 NE¼, Wyo. Asso. 17-AX.
31-40-78 NE¼, Salt Creek Cons. 16-A, 28-A.
34-40-78 NW¼, Mammoth Oil 205.
13-39-79 SW¼, Cont. Prod. H-2.
7-39-78 NW¼, Salt Creek Cons. 2-A.
1-39-79 Dain, Ohio Oil 5, 6.
12-39-79 E½, Ohio Oil 18.
33-39-78 SE¼, Mammoth Oil 405.
28-39-78 SE¼, Mammoth Oil 406.
8-39-78 NE¼, Marine Oil DS-2.
5-39-78 SE¼, Western States O. and L. 21-A.
13-39-79 SE¼, Bessemer Oil 2-AX.
32-40-78 NW¼, Continental Prod. B-7, B-8.
19-39-78 SW¼, Mosher Synd. 2-S.
28-3-78 SE¼, Mammoth Oil 408.
34-39-78 SW¼, Mammoth Oil 302.
13-39-79 SE¼, Blackstone Salt Creek F-4.
11-39-79 NE¼, Kasoming Oil B-11.
17-39-78 SE¼, Marine Oil 6.
17-39-78 NE¼, Carter Oil P-8.
2-39-79 SE¼, Sinclair Wyo. 7-A.
10-40-79 SE¼, Empire State 25-A.
7-39-78 SW¼, Salt Creek Cons. 18-A.
6-39-78 SE¼, Prod. and Ref. 4.
2-39-79 SW¼, Mutual Oil 12-A.
11-39-79 NE¼, Kasoming Oil B-4, B-6, B-7.
1-39-79 SE¼, Northwestern Oil 6-A.
2-39-79 SW¼, Northwestern Oil 1-AX.
8-39-78 SE¼, Outwest Pet. 6-A, 34-A.
11-39-79 SW¼, E. T. Williams 2-A.
17-39-78 SE¼, Marine Oil 2.
22-40-79 SW¼, Wyokans Synd. 4.
19-40-78 SE¼, Norris Oil 18-A.
5-39-78 NW¼, Western States O. and L. 4-A.
7-39-78 SE¼, Chappell Oil 3.
8-39-78 NE¼, Eureka Wyoming 2.
13-38-78 SW¼, Wyoming Teapot Oil 1.
16-38-78 NE¼, Nicholaysen et al.
12-39-79 Castle Rock, Ohio Oil 5.
5-39-78 SE¼, Western States 33-A.
8-39-78 SE¼, Carter Oil P-7.
21-40-78 NE¼, Salt Creek Cons. 22-A.
28-39-78 NW¼, Mammoth Oil 204.

Wells Drilling

12-39-79 Castle Rock 2, Ohio Oil 3.
12-39-79 Castle Rock 1, Ohio Oil 7.
1-39-79 Dain 9, Ohio Oil 12.
22-40-79 NW¼, Kasoming Oil G2S.
10-39-79 SE¼, Prod. and Ref. 9-A.
15-40-79 SE¼, Prod. and Ref. 8-X.
18-40-78 SW¼, Continental Prod. W-4.
29-40-78 SW¼, Continental Prod. S-3.
29-40-78 NW¼, Kinney Coastal 30-AX.
2-39-79 SW¼, Mutual Oil 13-AX.
28-40-79 SE¼, J. C. Smith S-1.
27-40-79 NE¼, Wyoming Asso. 5-A.
31-39-79 NW¼, Salt Creek Cons. 8-A.
13-40-79 SE¼, Mountain & Gulf 1-A.
22-40-79 NE¼, Midwest Oil 12-A.
22-40-79 NE¼, Midwest Oil 7-A.
21-39-78 SW¼, Mammoth Oil 304.
28-39-78 SE¼, Mammoth Oil 405.
27-39-78 SW¼, Mammoth Oil 303.
33-39-78 NW¼, Mammoth Oil 201.
7-39-78 NW¼, Kasoming Oil E-9.
22-40-79 SW¼, Wyokans Synd., 5.
17-39-78 NW¼, Western States O. and L. 12-X.
7-39-78 SE¼, Chappell Oil 1-DD.
8-39-78 NE¼, Carter Oil H-1.
24-39-79 NE¼, Kinney Coastal 16-A.
8-39-78 SW¼, Mutual Oil F-6.
24-39-79 NE¼, Mutual Oil 22-A.
10-40-79 SE¼, Empire State 26-AX.
3-39-79 SW¼, Salt Creek Cons. 22-AX.
3-39-79 NE¼, Salt Creek Cons. 30-A.
13-39-79 NW¼, Kasoming Oil D-3, D-6.
6-39-78 NW¼, Blackstone Salt Creek 3-A.
24-39-79 NE¼, Kinney Coastal 15-A.
15-40-79 Prod. and Ref. 7.
3-39-79 NW¼, Salt Creek Cons. 25-A.
11-40-79 NW¼, Mountain & Gulf 26-A.
17-39-79 Tract G, Ohio Oil 1.
3-39-79 NW¼, Duthie Oil 4.
23-39-79 SE¼, Evans Oil Corp.
20-39-78 Tract ET, Ohio Oil 4.
18-40-78 SW¼, Continental Prod. 1-W.
34-40-79 SW¼, Mutual Oil 13-A.
22-40-79 NW¼, Kasoming Oil G-14.
8-39-78 NE¼, Marine Oil 1-DS.
18-40-78 SE¼, Prod. and Ref. 2.
20-39-78 NW¼, Prod. and Ref. BY-9.
18-40-78 NW¼, Prod. and Ref. S-2.
13-39-79 SE¼, Prod. and Ref. 1.
19-39-78 NW¼, Continental Prod. R-3.
15-40-79 NE¼, Wyo. Associated 22-A.
3-39-79 SE¼, Salt Creek Cons. 26-A.
2-39-79 NW¼, Salt Creek Cons. 21-AX
18-40-78 SW¼, Salt Creek Cons. 25-A.
31-40-78 NE¼, Salt Creek Cons. 31-A.
13-40-79 NE¼, Mountain & Gulf 12-A.
35-40-79 NE¼, Midwest Oil 26-A.
34-40-79 NW¼, Midwest Oil 13-A.
11-40-79 SW¼, Midwest Oil 30-A.
11-40-79 SW¼, Midwest Oil 23-AS.
17-39-78 NE¼, Carter Oil P-9.
34-40-79 SW¼, Mutual Oil 24-A.
7-40-78 NE¼, Pacific Oil 4-A.
28-39-78 NE¼, Mammoth Oil 101.
28-39-78 SW¼, Mammoth Oil 302.
29-39-78 NE¼, Mammoth Oil 108.
21-39-78 SW¼, Mammoth Oil 302.
28-39-78 NW¼, Mammoth Oil 202.
28-39-78 NW¼, Mammoth Oil 205.
29-39-78 SE¼, Mammoth Oil 402.
28-39-78 NW¼, Mammoth Oil 203.
11-38-78 NW¼, Mammoth Oil 201.
29-39-78 NE¼, Mammoth Oil 109.
28-39-78 SW¼, Mammoth Oil 304.
33-39-78 SE¼, Mammoth Oil 402.
17-39-78 NW¼, Western States 36-AX.
10-39-79 NE¼, Bessemer Oil 7.
32-40-78 NW¼, Continental Prod. B-6.
5-39-78 SE¼, Carter Oil D-6.
22-40-79 SE¼, Wyoming Oil Fields 7-A.
22-40-79 NE¼, Wyoming Oil Fields 5-A.
34-40-79 NE¼, Wyoming Asso. 26-AX
34-40-79 SE¼, Wyoming Asso. 18-A.
34-40-79 NE¼, Wyoming Asso. 19-AX.
15-40-79 NE¼, Wyoming Asso. 26-A.
22-40-79 SE¼, Wyoming Asso. 32-A.
27-40-79 NE¼, Wyoming Asso. 5-A.
35-40-79 NW¼, Wyoming Asso. 29-A.
24-40-79 NW¼, Wyoming Asso. 26-A.
3-39-79 SE¼, Salt Creek Cons. 34-A.
19-40-78 SW¼, Midwest Oil 21-A.
11-40-79 SE¼, Midwest Oil 6-A.
4-38-78 NE¼, Mammoth Oil 101.

Shut Down

22-40-79 NW¼, E. T. Williams 23-A.
34-40-79 SW¼, Boston Wyoming 35-A.
29-40-78 NW¼, Omaha Lusk Oil 1.
28-40-79 SW¼, Jupiter Oil 27-A.
25-40-79 SE¼, Midwest Oil 7-A.
2-39-79 NW¼, Wyoming Asso. 23-X.
7-39-78 SE¼, Chappell Oil 2.
3-39-79 NW¼, Duthie Oil 5.
10-39-79 NW¼, Hardendorf et al 1.
20-39-78 SE¼, Mutual Oil 1.
4-38-78 SE¼, R. C. Tarrant 1.
35-39-78 SW¼, Teapot Dome Synd. 15-A.
2-38-78 SE¼, Teapot Dome Synd. 34-A
2-38-78 NE¼, Teapot Dome Synd.
32-39-78 NW¼, Colossal Synd.
Rigs, 52; wells drilling, 109; total, 161.

LANCE CREEK

Wells Drilling

28-36-65 Tom Bell, Buck Creek Oil 3.
3-35-65 Bell, Buck Creek Oil 5.
5-35-65 Elliott, C. Western States O. and L. 2.
5-36-65 Schuricht, Ohio Oil 1.
5-35-65 Thompson, Ohio Oil 1.
26-36-65 Buck Creek Oil 1.

Shut Down

18-35-65 NE¼, Union Oil 1.
East Part, Clark Prod. Co. 1.
Wells Drilling, 3.

WARM SPRINGS, GRASS CREEK, ETC.

Rigs

23-44-93 Flavin, Ohio Oil 1.
5-47-90 Heltzler, Ohio Oil 1.
Gebo Dome, Utah Oil & Ref. 1.

Wells Drilling

19-46-98 Ridgeley, Midwest Ref. 17.
31-48-90 Brome, Ohio Oil 1.
18-46-98 Washakie, Ohio Oil 4.
23-42-90 SE¼, Markham et al.
26-46-100 Prod. and Ref. 1.
Thermopolis town lot, H. D. Curtis et al.
27-46-98 Columbus Oil.
16-46-93 Curtis Oil 1.
36-43-91 Utah O. and R. 1.
13-45-93 SW¼, Midwest Ref. 1.
11-45-97 SE¼, Midwest Ref. 1.
18-46-98 Meeteetsee, Midwest Ref. 19-A.
19-46-98 State, Ohio Oil 39.
20-46-98 Mill Iron, Ohio Oil 68.
12-45-97 SW¼, Midwest Ref. 1.
18-46-98 Wylie, Ohio Oil 19.
Warm Springs Field, Leslie Oil.
31-48-99 SW¼, Midwest Ref.

Shut Down

27-46-98 Rankin, Dickie Oil 1.
8-46-98 NW¼, Grass Creek Prod. 1.
17-46-98 NW¼, Tunador Oil 1.
27-41-91 Wyoming Missouri Oil.
Rigs, 3; wells drilling, 22; total, 25.

BIG HORN BASIN

Rigs

24-58-99 Elk 3, Ohio Oil 23.
32-56-97 Howell, Occidental Oil.
Crystal Creek, C. W. Litton.
Cowley district, C. W. Litton.

Wells Drilling

31-48-100 SW¼, Midwest Ref. 1.
30-58-99 Elk 5, Midwest Ref. 15.
33-56-97 Cross Gas, Ohio Oil 1.
30-58-99 Woods, Ohio Oil 14.
Lamb anticline, Vanguard Oil 2.
32-58-99 SW¼, Midwest Ref. 1.
30-56-97 Prod. and Ref. 1.
Torchlight Dome, Bruce Holding Co. 1.
32-58-99 NW¼, Thompson Elk Basin 1.
26-57-95 Transark Oil 1.
8-51-100 Sonners, Ohio Oil 1.
23-53-100 Union Oil 1.
34- 9-23 Boyd Oil 1.
35- 9-23 Elk 11, Midwest Ref. 2.

Shut Down

24-58-100 Beck et al.
Cody district, Pahaska Synd.
17-49-91 Frontier O. and G.
2-56-97 Allen Oil.
23-58-97 Greenless et al.
16-47-100 Big Horn Dev. Co.
Cowley district, Julius Williams.
Burlington district, Tatman Mt. Oil Co.
Deaver district, Montana Wyoming 1.
Rigs, 4; wells drilling, 23; total, 27.

LOST SOLDIER

Rigs

32-26-87 NW¼, Prod. Oil & Gas 1.
11-26-90 NW¼, Bair Oil 38-A.
36-25-89 NE¼, Prod. and Ref. 2.
33-26-88 SE¼, Prod. and Ref. 2.
10-26-90 U. S. Pet. 1.
16-25-86 NW¼, Gen. Pet. 4.
8-25-86 General Pet. 1.
31-25-86 Gov. land, General Pet. 3, 4.
22-26-87 Gov. land, Sand Hills Oil 1.
3-26-90 SW¼, Hughes Oil 3-B.
21-26-86 Portland Wyoming Oil 4.

Wells Drilling

14-26-90 NW¼, Bair Oil B-3.
3-26-90 SE¼, Bair Oil 39-A.
22-26-90 NE¼, Prod. and Ref. 2.
12-26-90 Texas Prod. 1.
7-26-89 NW¼, Prod. and Ref. 3, 4.
4-25-88 NE¼, Prod. and Ref. 2.
33-26-88 SE¼, Prod. and Ref. 2.
25-26-88 SE¼, Hughes Royalty 1.
35-25-88 SW¼, Prod. and Ref. 2.
35-26-88 NE¼, Prod. and Ref. 4.
24-26-87 SW¼, Prod. and Ref. 20.
34-26-88 SW¼, Kasoming Oil C-2.
25-26-88 SW¼, Kasoming Oil D-1.
34-27-90 S½, Annabell Wyoming 1.
9-25-96 SE¼, Sand Hills Oil 1, 2.
26-26-86 Portland Wyoming 1, 2, 3.
33-26-88 NE¼, Prod. and Ref. 1, 3.
2-26-90 SE¼, Prod. and Ref. 1.
11-26-90 Bair Oil 36-A, 47-A.
3-25-87 Gov. land, General Pet. 1.
29-26-87 Prod. and Ref. 1.
25-26-86 Prod. and Ref. 22.
22-26-89 Prod. and Ref. 1.
36-26-88 Ohio Oil 1.
1-23-89 Prod. and Ref. 1.
11-26-90 NW¼, Bair Oil D-3.
10-26-90 NE¼, Bair Oil C-2.
5-24-86 Wickersham, Ohio Oil 1.

Shut Down

2-24-87 Calhoun, Ohio Oil 2.
10-26-88 Renroh Synd. 1.
1-25-88 NE¼, M. and S. Synd. 1.
35-25-88 M. M. Armstrong 1.
11-26-87 Gov. land, Emery Synd. 1.
2-25-87 Gov. land, General Pet. 1.
16-25-86 Gov. land, General Pet. 3.
3-25-87 Gov. land, General Pet. 1.
31-36-86 Gov. land, General Pet. 1.
14-25-89 Gov. land, Columbia Oil 1.
16-26-89 U. S. Petroleum.
8-25-86 Gov. land, U. S. Waugh 1.
25-26-89 Gov. land, Commonwealth Pet. 1.
Rigs, 12; wells drilling, 47; total, 59.

ROCK RIVER DISTRICT

Rigs

3-17-76 Gov. land, Western Holdings Co.

Wells Drilling

34-23-79 NE¼, Central Pipe Line 1.
34-20-78 State, Ohio Oil 10, 11.
14-15-75 SE¼, Wyoming Hollow Basin 1.
26-21-79 Southwestern Pet. 2.
3-19-78 H. and C., Ohio Oil 2.
23-16-74 Gov. land, G. A. Briggs.
11-19-78 H. and C., Ohio Oil 2.
27-20-78 D. C. Co., Ohio Oil 2.
25-21-79 SE¼, Southwestern Pet. 1.

Shut Down

4-19-78 State, Hutton Lake Oil 1.
32-16-74 Gov. land, Spindle Top Oil 1.
18-15-75 Gov. land, Apex Ref. 1.
18-15-75 Gov. land, Pet. Oil Fields 1.
12-20-77 Gov. land, McLaughlin et al.
10-18-77 Gov. land, Carbon Oil 1.
11-19-76 Gov. land, Dutton Creek O. and G.
21-21-76 Gov. land, McMurray et al.
32-21-78 Gov. land, Ross et al.
20-18-77 Gov. land, Wyoming Rock Creek 1.
Rigs, 1; wells drilling, 20; total, 21.

FREMONT COUNTY

Rigs

23-32-95 Sand Draw Prod. and Ref. 2.
2-39-83 Chemical Dome, Lux Oil Corp.
Sage Creek, Washakie Synd.
29-34-92 Oliver et al.

Wells Drilling

15-6-2 SW¼, Union Oil 13.
6-6-2 SW¼, Union Oil 2.
Dutton Basin, Texas Prod. Co.
18-27-95 SW¼, Sage Creek Pet. 3.
24-23-96 Red Desert Oil Synd.
Lysite Dist., Miners Oil & Gas 1.
15-34-90 Ward Oil 1.
27-6-3 Kinney Coastal Oil 1.
9-32-95 Sand Draw, Prod. and Ref. 2.
15-32-95 Sand Draw, Prod. and Ref. 3.
14-32-95 Riverton Drilling Co.
7-28-92 NW¼, Southwestern Pet. 1.
8- 5- 2 Marine Oil 2.
17-27-95 Sage Creek Pet. 2.
Burley Dome, Burley Dome Oil 1.
26-5-2 Connolly Oil & Land.
Wind River district, Teton Pet. 1.
2-27-92 Fremont Con. Pet. 1.
25-27-92 American Workers Oil Fields 1.
14-28-93 American Workers Oil Fields 1.

Shut Down

Derby Dome, Derby Dome Oil 8, 9.
14-35-2 Prod. and Ref. 1.
Shoshoni district, Indian Oil 1.
Chemical Dome, Shoshoni Synd. 1.
Lower Muskrat, Minnesota Western 1.
16-38-93 Howe Oil & Gas.
McComb Dome, Northern Wyoming Oil 1.
Maverick Springs, Maverick Springs Dev. 1.
Dutton Basin, Seal Oil Asso.
Rigs, 4; wells drilling, 30; total, 34.

MULE CREEK

Shut Down

36-41-61 Western Dakota Oil 1.
30-39-60 Western States O. and L.
Wells drilling, 2.

OSAGE

Rigs

17-46-63 Baldwin et al.
McKenna Bros.
Supreme Pet.

Wells Drilling

10-45-61 Paul Young.
7-46-63 Tom Don.
31-46-63 Newcastle Oil.
17-46-63 Osage Oil Trust.
5-46-63 Dakoming Oil.

Shut Down

18-46-63 Noco Pet.
4-46-63 C. H. S. Co.
6-46-63 Bock Bros.
5-46-63 Independent Prod.
33-46-61 Paul Young.
9-46-63 Cody Osage Oil.
4-46-63 Doherty Interests.
31-47-63 Condit Petroleum.
17-46-63 Wilson & Warren.
20-46-63 Osage Upton Oil.
5-46-63 Sidney Oil.
28-46-61 Paul Young.
24-46-63 Fagan interests.
24-46-64 Midwest Ref. Co.
4-46-63 Atlas Oil.
19-46-63 Sinclair Wyoming 3, 4.
25-46-63 Fletcher Bros.
1-46-63 Webster Oil.
Rigs, 3; wells drilling, 24; total, 27.

NATRONA COUNTY

Rigs

22-37-81 California Oil 1.

Wells Drilling

18-33-83 NW¼, California Oil 5.
15-32-82 Danaher Synd. 1.
36-37-82 SE¼, Midwest Ref. 1.
31-40-80 Comet Synd.
9-34-82 Bradford Wyoming 1.
20-37-82 NW¼, Wyland Synd. 1.
Poison Spider Field, Fargo Oil 24, 25, 1
10-36-85 Boone Dome, New York Oil.
35-35-84 E½, Alaska Dev. 1.
35-35-84 W½, Alaska Dev. 2.
Two Bar Dome, Casper Synd. 1.
12-33-83 New York 9, 10.
9-35-85 New York Oil 4.

Shut Down

2-34-84 California Oil 1.
Johnson Ranch, Newton et al 1.
4-29-81 Kinney Coastal Oil.
12-34-84 Cheney et al.
Lox Anticline, Lox Synd.
Rigs, 1; wells drilling, 21; total, 22.

LINCOLN AND UINTAH COUNTIES

Rigs

3-26-113 Wyoming Reserve Oil 1.
12-29-93 Federal Drg. Co.
12-15-118 Prod. O. and G.
Waterfall Dome, Kio-ro-no Synd.

Wells Drilling

Corder Ranch, Beaver Oil Co.
30-14-118 Hyland O. and G.

Shut Down

Afton district, Wyoming Idaho Oil 1.
11-21-115 Waterfall district, Gulf Coast
Cretaceous Field, R. N. Co. 1.
28-28-112 Geo. Downley et al 1.
Big Piney, Lincoln Idaho 3.
Cumberland Dome, J. A. Moore.
1-29-112 Utterback Synd.
1-28-114 Chas. Lackey et al 1.
Big Piney, Nippon Oil.
Waterfall Dome, Consol. Petroleum.
Carter Field, Wyoming Illinois Oil 1.
Fossil Field, Wyoming Pacific Oil.
Davison Dome, Gulf Coast Oil.
14-21-117 Hersman Oil.
Rigs, 4; wells drilling, 17; total, 21.

BAXTER BASIN

Rigs

27-17-104 SE¼, Montacal Oil 1.
7-17-103 Petrogas Oil.

Wells Drilling

10-16-104 SE¼, Midwest Ref. 29.
10-16-104 NW¼, Midwest Ref. 36.
26-17-104 NE¼, Associated Oil 1.
2-17-104 NE¼, Midwest Ref. 1.
24-17-104 SW¼, Montacal Oil 1.
36-18-104 NE¼, Midwest Ref. 1-X.
25-18-104 SE¼, Midwest Ref. 29.
23-17-104 Associated Oil 1.
36-17-104 NW¼, Prod. and Ref. 1.
22-16-104 AJP, Ohio Oil 1.
14-17-104 Hay, Ohio Oil 1.

Shut Down

30-18-104 Midwest Ref. 6-AX.
8-16-104 NE¼, Montacal Oil 1.
Rigs, 2; wells drilling, 13; total, 15.

MISCELLANEOUS

Rigs

LAK Ranch, Newcastle District, Furg
et al.
Dewey Dome, Mexico Wyoming Oil.
19-32-63 Teton Place Synd.
Moorcroft Dist., Fee and Rice.
15-51-67 Greytop Oil.
Little Missouri, Union Oil.
32-48-63 Wyo. Dev. Synd.
Rozet Dome, Omaha Synd. 1.

Wells Drilling

20-21-80 NW¼, Prod. and Ref. 1.
Fiddlers Creek, Frederick Oil & Gas.
Buffalo district, Kinney Coastal 1.
20-21-80 Prod. and Ref. 3.
16-21-80 Prod. and Ref. 1.
28-47-65 Goose Synd.
Billy Creek, Carter Oil 4.
22-45-62 Shaw & Scott.
Colony district, Walter & Barnard.
Clay Basin, Prod. and Ref. 1.
Lingle Dist., Foreman et al.
21-42-82 Carter Oil 3.
8-68-65 Prod. and Ref. 1.
Rozet Dome, Rozet Dome Oil 1.
5-31-70 Douglas Dist., Frye & Dye.
17-46-82 Billy Creek, Carter Oil 3.
Glendo district, Nebraska Synd.
Vernon Dome, Walter Hargis et al.
9-41-80 Newton & Maxwell.
23-39-70 Womens National Oil 1.
16-44-62 Midwest Ref. 1.

Shut Down

16-42-79 Atlantic Drilling Co. 1.
Pickett Lake, Annabell Wyoming 1.
La Prele, Armour Synd.
Moorcroft Field, Southwest Oil.
Stroner Ranch, Illinois Wyoming Oil.
Cottonwood Dome, Baker Pet.
Moorcroft District, McWhorter Interests
Waskeman District, Mississippi Delta Oil.
17-50-68 Trail Creek Oil.
17-51-66 Houghton Oil.
Barger Ranch, Wyoming Hi Gravity Oil.
33-36-78 Turner Creek Oil.
Page Dome Crook County, Hover Bros.
Douglas District, Reliance Oil.
Douglas District, Ajax Wyoming Oil.
Horse Creek, National Oil.
7-37-72 Cheyenne River Oil.
26-37-61 Piatte Wyoming Oil.
18-39-68 Glendo Oil & Gas.
11-31-71 La Bonte O. and G.
1-16-70 Blaiser Synd.
2-25-5 Lost Creek Cons.

Thornton Field, Neffsy Bros.
Rigs, 8; wells drilling, 44; total, 52.

MONTANA
CAT CREEK
Rigs
12-15-28 California Co. 4.
2-15-28 SE¼, California Co. 1.
Wells Drilling
9-15-27 NE¼, Peerless Oil 2.
23-14-28 NE¼, Winnett Pacific 1.
1-15-28 SE¼, Custer O. and G.
1-15-28 Mid Northern Oil 3.
12-15-28 NE¼, California Oil 3.
28-16-28 Republic Peerless Oil 1.
9-15-29 NE¼, Frantz Corp. 8.
7-15-29 NW¼, Fifty Six Pet.
7-15-29 NW¼, Hogan Oil 2.
12-15-28 NE¼, Shaffer O. and R.
10-15-29 Fifty Six Pet.
9-15-29 NE¼, Mid Northern Oil.
29-14-29 Flatwillow Oil 1.
27-15-30 Frantz Corp.
24-15-30 Absoraka Oil Dev.
Shut Down
22-15-30 A. B. Miller.
11-15-30 Helena Cat Creek Oil.
20-15-30 Montacal Oil.
8-15-29 Logan Corp.
15-15-30 Montana Synd.
24-15-30 Swartz et al.
11-15-30 Miles City Oil.
Rigs, 2; wells drilling, 22; total, 24.

KEVIN SUNBURST
Rigs
11-35-2 Stockmans Bank, Ohio Oil 2.
9-35-2 Bruins, Western Pet. Ex. 4.
24-36-2 Davey, Ohio Oil 5.
20-35-2 Carson, Securities Oil 1.
13-35-2 Barth, Hager Stevenson 2.
29-35-1 State, Potlatch O. and G. 1.
21-34-1 Stockmans Bank, Potlatch O. and G. 1.
20-33-2 Jarrett, Sunburst O. and G.
25-36-2 Kaskin, Ohio Oil 1.
4-35-2 Baker, Ohio Oil 9.
30-35-2 Broadwell, Hecla Oil 1.
20-35-2 Whitman, Homestake Exp. 1.
7-31-3 Jones, Olympic Oil 1.
Wells Drilling
20-35-2 McBride, Canadian American 1.
23-33-1 Webb, Shelby O. and G. 1.
29-35-2 Maughan, Swaney Oil 1.
25-34-2 Stannard, Wyomonta Oil 1.
15-35-2 Kenney, Western Pet. Ex. 2.
9-35-2 Swears, Mid-Northern Oil 3.
24-35-2 Zimmerman, Sunburst Wells 1.
14-35-2 Reeg, Kio-Ora Sunburst 2.
6-35-2 Howling, Mid-Northern Oil 5.
9-34-2 Howling, Mid-Northern Oil 5.
14-35-2 NW¼, Maybelle Oil 1.
11-34-4 Calironia Co. 1.
Howling lease, Carter Oil 1.
24-33-1 Shelby Synd. 1.
Andreich lease, Homestake Explo. 3, 4.
9-35-2 Swears, C. Beardsley 2.
29-36-2 Malcolm, National Explo. 1.
28-27-2 McAlpine, Spartan Oil 1.
20-35-2 Halter, Kevin Roberts 1.
26-35-2 Halter, Sunburst Production 2.
30-35-1 Emmons, Dakota Montana 1.
7-34-1 Carlson, Dakota Montana 1.
Shut Down
29-35-1 Bluhm, Mid Field Oil 1.
18-32-4 Beck Pet. 1.
8-35-2 McGowan, Montana Giant 1.
25-35-2 Stewart, Campbell 1.
17-34-2 De Groat, Shelby Kevin 1.
34-35-2 NW¼, Spartan Montana 1.
26-35-3 Godertz, Campbell 1.
26-35-3 Godertz, Jr., Campbell 1.
12-34-1 Peterson, Lucky Forty 1.
21-35-2 McGowan, Holding and Royalty Co. 1.
13-35-3 Campbell, Campbell 5.
16-34-2 NW¼, Rainbow Oil 2.
4-36-2 Coe Oil 1.
21-35-3 NW¼, Shaffer Oil 1.
1-34-2 NE¼, Sunburst O. and G.
35-35-3 California Co. 1.
Rigs, 13; wells drilling, 38; total, 51.

MISCELLANEOUS—MONTANA
Rigs
Livingston Dome, Whiteside et al.
Porcupine Dome, Stellar O. and G. 7.
Great Falls Dist., Virgelle Oil.
14-16-15 Fullerton Oil 1.
Near Hibbard, Hibbard Oil 1.
Wells Drilling
16-15-26 Winnett Shallow Field Synd.
28- 4-16 SE¼, Consolidated O. and G. 1.
14- 7-16 NE¼, California Co.
3-12-25 SW¼, Minnesota Flatwillow.
2-32-33 Smith, Homestake Exp. 1.
9-37-4 NE¼, Gladys Belle 1.
6-23-4 NE¼, Carter Oil 1.
23-6-5 Frazier et al 1.
29-21-14 Mid States Oil.
9-12-14 Oil Springs Dev. 1.
29-11-23 Montana Pioneer 2.
35- 7-24 Pennsylvania Oil Dev. 1.
12-25-50 Butler O. and G.
34-20-12 Continental Prod. 1.
6-25-17 Ohio Oil 2.
7-3-19 Snyder, Mid Northern 1.
20-25-5 Larsen, Walter Bright.
2-26-6 Jones, Walter Bright.
29-24-2 Markham, Midwest Ref. 1.
5-27-7 Kelly, Empire Oil 1.
12-33-13 Hager Stevenson.
17-20-13 Arrow Creek Oil 1.
McGinnis Dome, Shearard Synd. 1.
23-23-4 Flume Montana Giant 1.
4-27-6 NW¼, Gypsy Oil 1.
18-23-21 Lake, Carter Oil 1.
2-28-3 NE¼, Dry Fork Oil 1.
21-24-24 Phillips Dev. Co., Ohio Oil 1.
Bauley Dome, Montana Equipment Co.
Muddy Creek, Mountaineer Oil 1.
24-18-4 Eliakin Oil 1.
26-1-21 Hepp, Mid Northern 1.
18-16-26 Newdigate et al 1.
14-11-24 Devils Basin, Fifty-Six Pet.
15-27-7 Empire Montana Oil.
9-11-24 NW¼, Absoraka Oil Dev. 1.
6-1-21 NE¼, Grimsted & Brown.
Ragged Point, Flynn Bros.
Antelope Point, Hardtimes Oil 1.
2-26-6 Marion Edwards.
23-14-29 Whaley et al.
24- 4-21 Absoraka Oil Dev. 1.
34-18-29 Stellar O. and G. 6.
9-18-29 Stellar O. and G. 5.
7- 4-22 Security Pet. 1.
35-32-32 SE¼, Bowdoin O. and G.
25- 5 - 2 SW¼, Potter Basin Oil.
27- 7-13 Harlowton O. and G. 1.
17-11-29 Absoraka Oil Dev.
Wilsal Dome, Shields Valley Oil.
4-17-20 California Co.
10-13-24 Absoraka Oil Dev.
Great Falls Dist., Cascade O. and G.
22- 9- 3 Greater Great Falls Oil.
21-14-28 Black Hawk Oil.
2-22-26 Bitter Creek Oil.
2-32-33 Golden West Oil.
Shut Down
6-13-14 NE¼, Fulton Oil 1.
26-14-29 NW¼, Jackson Dome Oil.
18- 6-24 SE¼, Yellowstone Pet. Synd.
7-27- 7 Circle Oil 1.
9-11-24 Tri City Oil.
18-26-26 Walker Bros.
18-16-26 Morrow Oil.
25-17-22 Cosmos Oil.
12-11-23 Arsted Oil.
Devils Basin, Alberta Block Coal Co.
Big Coulee, Midland Pet.
3- 4-23 Hoosier Oil.
12-18-13 Arrow Creek Pet.
28-13-25 Wayne Pet.
3-18-20 Big Bud Oil.
26- 7-12 Elk Pet. Synd.
25-32-19 Bowes Structure Oil.
36- 2- 7 Gladys Belle Oil.
Coalwood Dome, Annamay Oil.
Hailstone Basin, Hailstone Basin Oil.
12-11-24 Van Wagenen et al.
Devils Basin, Montana Central Oil.
Devils Basin, Monarch Oil.
24-11-24 Van Duzen Oil.
12-11-15 Minnesoate Montana Oil.
35- 7-34 Red River Oil.
35- 5- 8 Portland Synd.
30- 2-21 Columbus Oil.
24- 5-17 Unit O. and G.
23- 2- 5 Fox et al.
19-11-23 Montana Pioneer 1.
23- 3-34 Davis Creek Synd.
33- 5-28 Beauvois Oil.
12-11-13 Kalispell Synd.
13-13-20 Omaha Pet.
32- 1-38 Tennessee Montana Oil.
6- 5-25 Grey Eagle Oil.
23-11-24 Allen Oil.
21-11-39 Success Ref. Co.
8-35- 1 Idaho Mont. 1.
20-30- 1 A. M. Barringer.
31-15-45 Crow Rock Oil.
1- 6-20 Bitter Root Oil.
6- 6-17 Armsted Oil.
1-10-21 Williams O. and G.
2- 2-26 Clarks Fork Oil.
25- 8- 9 Beaverhead Alberta Oil.

Classified Advertisements Pages 108-109

11- 1- 1 Ruby Rideg Oil.
2- 2-12 Montana Pacific Oil.
10-34-34 Mid Northern Oil.
13- 3-22 SW¼, Lawson Ritter.
Rigs, 5; wells drilling, 108; total, 113.

UTAH

MISCELLANEOUS
Wells Drilling
Boundary Butte, Midwest Oil 1.
34-25-21 Big Six Oil.
16- 2- 5 State, Western Empire Oil.
19-42-18 Gov. land, Monumental Oil.
35-42-14 Wilson Cranmer Co.
6- 2- 8 Ohio Oil 1.
Crescent Dome, Crescent Eagle Oil.
31-42-18 Union Oil of Utah.
Woodside Dome, Utah O. and R. 1.
Shut Down
13-14-19 Castledale Oil.
27-16- 4 Producers Oil.
Lakeside Dome, W. R. Holmes.
Diamond Fork, Franco Utah Oil.
Diamond Fork, Gustaven Oil.
17- 4- 6 Ute Pet., Utah Southern Oil.
25-12- 1 Cache Valley Oil.
Boxelder County, Nebeker interests.
2-17- 3 Utah Central Oil.
Moffat Dome, Uintah Exp. Co.
Harrisburg Dome, Virgin Oil.
Gainsville Dome, John Finnerty.
Evans claim, Uintah County, U. S. Oil.
Hill Creek, Hill Creek O. and R.
Hill Creek, Mutual Oil.
Rigs, 0; wells drilling, 24; total, 24.

WYOMING
WELLS COMPLETED

23-40-79 NW¼, Wyoming Oil Fields 10-A	250
17-39-78 Tract G, Ohio Oil 2	35
24-40-79 SW¼, Midwest Oil 26-A	1115
11-40-79 SW¼, Midwest Oil 22-AS	2030
36-40-79 NE¼, Wyoming Asso. 13-AX	230
34-40-79 NE¼, Midwest Oil 11-AX	260
2-39-79 NW¼, Midwest Oil 23-AX	256
2-39-79 NW¼, Midwest Oil 15-A	480
11-39-79 SE¼, Kasoming Oil A-12	300
11-39-79 NE¼, Kasoming B-18	120
5-39-78 SE¼, Marine Oil CR-1	75
5-39-78 SE¼, Marine Oil CR-2	75
15-40-79 SW¼, Prod. and Ref. 1	100
15-40-79 SE¼, Prod. and Ref. 4	400
8-39-78 NE¼, Western States O. and L. 33-A	75
19-40-78 SE¼, Continental Prod. N-3	150
32-40-78 SW¼, Continental Prod. B-5	870
29-40-78 NW¼, Kinney Coastal Oil	412
1-39-79 SE¼, Mutual Oil 34-AX	150
19-39-78 SE¼, Texas Prod. 4	200
32-40-78 SW¼, Frantz Corp. 36-A	300
35-40-79 NW¼, Wyoming Asso. 11-A	395
23-40-79 NE¼, Wyoming Asso. 26-A	428
35-40-79 NE¼, Midwest Oil 26-AS	400
15-40-79 SE¼, Midwest Oil 24-AXS	50
1-39-79 NE¼, Midwest Oil 23-AX	100
23-40-79 SE¼, Wyoming Oil Fields 26-A	733
14-40-79 SW¼, Wyoming Asso. 11-A	650
13-40-79 NE¼, Mountain & Gulf 36-A	235
34-29-78 SW¼, Mammoth Oil 301	130
10-38-78 NE¼, Mammoth Oil 102	225
29-39-78 NE¼, Mammoth Oil 111	100
32-36-65 Rohiff, Union Oil 2	gas
4-35-65 Cash, Ohio Oil 2	3000
31-58-99 Tip 2, Midwest Ref. 1	gas
23-48-91 Olympic Oil 1	dry
2-19-88 NW¼, Hatfield Oil 1	gas
26-16-77 Coughlin, Ohio Oil 1	400
10-36-94 NE¼, Myrin Oil 1	dry
2-33-95 NE¼, Apex Oil 1	dry
7-46-63 Elton Oil	25
35-36-84 E½, Alaska Dev. 3	dry
Wakeman Field, E. J. Rachua	15
Wells completed	43
Production	14,669
Dry	4
Gas	3
Gas production	71,000,000

MONTANA
WELLS COMPLETED

14-15-29 Green, Frantz Corp. 9	100
Green Tract, Mid Northern Oil 19	100
Wildshultz, Mid Northern Oil 8	100
24-35-2 Hagerty, Idaho Montana Oil 1	50
25-35-2 Standard, Beaver Oil 2	25
3-35-2 Davey, Ohio Oil 7	65
25-35-2 NE¼, California Co. 2	50
25-35-2 Boyd, Adams Land Co.	25
25-35-2 State, Empire Montana 2	50
4-37-3 NE¼, Griffith Oil 1	dry
9-34-2 Suhr, Sunburst Eline 2	dry
23-35-2 Zimmerman, Adams Sunburst	15
21-35-2 Halter, T. S. Hogan	30
22-35-2 Loreson, T. S. Hogan 1	40
4-35-2 Swears, Western Pet. Ex. 3	dry
8-34-2 Herley, Swartz Kevin	10
2-35-1 Sweetgrass Arch Consol.	30
30-35-2 Heimericks, Montana Giant	5
4-34-2 Ostrick, Sweetgrass Oil 2	400
7-34-2 Crawford, Swartz Kevin	dry
13-35-2 Kasilapell Kevin 1	dry
18-23-4 Bennett, Montana Giant 1	dry
Wells completed	22
Production	1095
Dry	6
Gas	0
Gas production	0

See Page 4

1663

Tret-O-lite

Reg. U. S. Patent Off.

PROCESS PATENTED. The Barnickel processes for treatment of cut oil and other petroleum emulsions by the use of chemical agents are protected by valid process patents issued by the United States and foreign countries.

The purchaser of **TRET-O-LITE** is licensed to practice the Barnickel processes to the extent permitted by the quantity of TRET-O-LITE purchased. He is not licensed to use any other chemical covered by the Barnickel patents, either alone or with **TRET-O-LITE.**

WM. S. BARNICKEL & CO.
St. Louis, Mo.

ATTENTION ~ OIL PRODUCERS

BERITE

A non-explosive and non-inflammable compound for the removal of paraffine, asphaltum, salt, and gypsum from Oil Wells, Gas Wells, Tanks and Lead Lines.

Will increase your production.

Has been used successfully in more than 1000 wells.

Send for our pamphlet on *"How Much the Paraffine Condition of Your Wells Costs You."*

Distributed by

OIL WELL SUPPLY CO
PITTSBURGH-U.S.A.
BRANCHES IN ALL THE OIL FIELDS

WYOMING FIELDS

Summary of Field Operations

District—	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Big Muddy	0	0	0	0	9	9
Salt Creek	32	11,229	0	52	109	161
Lance Creek ...	2	3,000	0	0	8	8
Warm Spgs., etc.	0	0	0	3	22	25
Big Horn Basin.	2	0	1	4	23	27
Lost Soldier ...	1	0	0	12	47	59
Rock River dist.	1	400	0	1	20	21
Fremont County.	2	0	2	4	30	34
Mule Creek	0	0	0	0	2	2
Osage	1	25	0	3	24	27
Natrona County	1	0	1	1	21	22
Lincoln and Uintah Cos...	0	0	0	4	17	21
Baxter Basin...	0	0	0	2	13	15
Miscellaneous ..	1	15	0	8	44	52
Total Nov.....	43	14,669	4	94	389	483
Total Oct.....	39	10,745	5	109	417	526
Difference ...	4	3,924	1	15	28	43

Gas production, 71,000,000 feet.

MONTANA

Summary of Field Operations

District—	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Cat Creek	3	300	0	2	22	24
Kevin Sunburst.	18	795	5	13	38	51
Miscellaneous ..	1	0	1	5	108	113
Total Nov....	22	1,095	6	20	168	188
Total Oct.....	33	780	14	23	191	214
Difference ...	11	315	8	3	23	26

UTAH

Summary of Field Operations

	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Miscellaneous ..	0	0	0	0	24	24

(Same as October.)

BIG MUDDY

Wells Drilling

8-33-76 Humphreys, Mutual Oil 38.
8-33-76 Crary, Texas Prod. Co. 31.

Shut Down

2-33-76 Fenex, Mutual Oil 4.
15-33-76 Whiteside, Mutual Oil 3.
8-33-76 Humphreys, Mutual Oil 37.
8-33-76 Crary, Texas Prod. 32.
4-32-77 Big Bear Oil.
23-33-76 Northstar Oil.
36-33-76 Pathfinder Oil.
Wells drilling, 9.

SALT CREEK

Rigs

2-39-79 SW¼, Mutual Oil 2-A.
24-40-79 NW¼, Wyo. Asso. 29-AX.
27-40-79 NE¼, Wyo. Asso. 17-AX.
21-40-78 NE¼, Salt Creek Cons. 16-A, 28-A.
34-40-78 NW¼, Mammoth Oil 205.
13-39-79 SW¼, Cont. Prod. H-2.
7-39-78 NW¼, Salt Creek Cons. 2-A.
1-39-79 Dain, Ohio Oil 5, 6.
12-39-79 E½, Ohio Oil 18.
33-39-78 SE¼, Mammoth Oil 405.
28-39-78 SE¼, Mammoth Oil 406.
8-39-78 NE¼, Marine Oil DS-2.
5-39-78 SE¼, Western States O. and L. 21-A.
13-39-79 SE¼, Bessemer Oil 2-AX.
32-40-78 NW¼, Continental Prod. B-7, B-8.
19-39-78 SW¼, Mosher Synd. 2-S.
28-3-78 SE¼, Mammoth Oil 408.
34-39-78 SW¼, Mammoth Oil 302.
13-39-79 SE¼, Blackstone Salt Creek F-4.
11-39-79 NE¼, Kasoming Oil B-11.
17-39-78 SE¼, Marine Oil 6.
17-39-78 NE¼, Carter Oil P-8.
2-39-79 SE¼, Sinclair Wyo. 7-A.
10-40-79 SE¼, Empire State 25-A.
7-39-78 SW¼, Salt Creek Cons. 18-A.
6-39-78 SE¼, Prod. and Ref. 4.
2-39-79 SW¼, Mutual Oil 12-A.
11-39-79 NE¼, Kasoming Oil B-4, B-6, B-7.
1-39-79 SE¼, Northwestern Oil 6-A.
2-39-79 SW¼, Northwestern Oil 1-AX.
8-39-78 SE¼, Outwest Pet. 6-A, 34-A.
11-39-79 SW¼, E. T. Williams 2-A.
17-39-78 SE¼, Marine Oil 2.
22-40-79 SW¼, Wyokans Synd. 4.
19-40-78 SE¼, Norris Oil 18-A.
5-39-78 NW¼, Western States O. and L. 4-A.
7-39-78 SE¼, Chappell Oil 3.
8-39-78 NE¼, Eureka Wyoming 2.
13-38-78 SW¼, Wyoming Teapot Oil 1.
16-38-78 NE¼, Nicholaysen et al.
12-39-79 Castle Rock, Ohio Oil 5.
5-39-78 SE¼, Western States 33-A.
8-39-78 SE¼, Carter Oil P-7.
31-40-78 NE¼, Salt Creek Cons. 22-A.
28-39-78 NW¼, Mammoth Oil 204.

Wells Drilling

12-39-79 Castle Rock 2, Ohio Oil 3.
12-39-79 Castle Rock 1, Ohio Oil 7.
1-39-79 Dain 9, Ohio Oil 12.
22-40-79 NW¼, Kasoming Oil G2S.
10-39-79 SE¼, Prod. and Ref. 9-A.
15-40-79 SE¼, Prod. and Ref. 8-X.
18-40-78 SW¼, Continental Prod. W-4.
29-40-78 SW¼, Continental Prod. S-3.
29-40-78 NW¼, Kinney Coastal 30-AX.
2-39-79 SW¼, Mutual Oil 13-AX.
28-40-79 SE¼, J. C. Smith S-1.
27-40-79 NE¼, Wyoming Asso. 5-A.
11-39-79 NW¼, Salt Creek Cons. 8-A.
13-40-79 SE¼, Mountain & Gulf 1-A.
22-40-79 NE¼, Midwest Oil 12-A.
22-40-79 NE¼, Midwest Oil 7-A.
21-39-78 SW¼, Mammoth Oil 304.
28-39-78 SE¼, Mammoth Oil 405.
27-39-78 SW¼, Mammoth Oil 303.
33-39-78 NW¼, Mammoth Oil 201.
7-39-78 NW¼, Kasoming Oil E-9.
22-40-79 SW¼, Wyokans Synd., 5.
17-39-78 NW¼, Western States O. and L. 12-X.
7-39-78 SE¼, Chappell Oil 1-DD.
8-39-78 NE¼, Carter Oil H-1.
24-39-79 NE¼, Kinney Coastal 16-A.
8-39-78 SW¼, Mutual Oil F-6.
24-39-79 NE¼, Mutual Oil 22-A.
10-40-79 SE¼, Empire State 26-AX.
3-39-79 SW¼, Salt Creek Cons. 22-AX.
3-39-79 NE¼, Salt Creek Cons. 30-A.
13-39-79 NW¼, Kasoming Oil D-3, D-6.
6-39-78 NW¼, Blackstone Salt Creek 3-A.
24-39-79 NE¼, Kinney Coastal 15-A.
15-40-79 Prod. and Ref. 7.
3-39-79 NW¼, Salt Creek Cons. 25-A.
11-40-79 NW¼, Mountain & Gulf 26-A.
17-39-79 Tract G, Ohio Oil 1.
2-39-79 NW¼, Duthie Oil 4.
23-39-79 SE¼, Evans Oil Corp.
20-39-78 Tract ET, Ohio Oil 4.
18-40-78 SW¼, Continental Prod. 1-W.
34-40-79 SW¼, Mutual Oil 13-A.
22-40-79 NW¼, Kasoming Oil G-14.
8-39-78 NE¼, Marine Oil 1-DS.
18-40-78 SE¼, Prod. and Ref. 2.
20-39-78 NW¼, Prod. and Ref. BY-9.
18-40-78 NW¼, Prod. and Ref. S-2.
13-39-79 SE¼, Prod. and Ref. 1.
19-39-78 NW¼, Continental Prod. R-3.
15-40-79 NE¼, Wyo. Associated 22-A.
3-39-79 SE½, Salt Creek Cons. 26-A.
2-39-79 NW¼, Salt Creek Cons. 21-AX
18-40-78 SW¼, Salt Creek Cons. 25-A.
31-40-78 NE¼, Salt Creek Cons. 31-A.
13-40-79 NE¼, Mountain & Gulf 12-A.
35-40-79 NE¼, Midwest Oil 26-A.
34-40-79 NW¼, Midwest Oil 13-A.
11-40-79 SW¼, Midwest Oil 30-A.
11-40-79 SW¼, Midwest Oil 23-AS.
17-39-78 NE¼, Carter Oil P-9.
34-40-79 SW¼, Mutual Oil 24-A.
7-40-78 NE¼, Pacific Oil 4-A.
28-39-78 NE¼, Mammoth Oil 101.
28-39-78 SW¼, Mammoth Oil 302.
29-39-78 NE¼, Mammoth Oil 108.
21-39-78 SW¼, Mammoth Oil 302.
28-39-78 NW¼, Mammoth Oil 202.
28-39-78 NW¼, Mammoth Oil 205.
29-39-78 SE¼, Mammoth Oil 402.
28-39-78 NW¼, Mammoth Oil 203.
11-38-78 NW¼, Mammoth Oil 201.
29-39-78 NE¼, Mammoth Oil 109.
28-39-78 SW¼, Mammoth Oil 304.
33-39-78 SE¼, Mammoth Oil 402.
17-39-78 NW¼, Western States 36-AX.
10-39-79 NE¼, Bessemer Oil 7.
32-40-78 NW¼, Continental Prod. B-6.
5-39-78 SE¼, Carter Oil D-6.
22-40-79 SE¼, Wyoming Oil Fields 7-A.
22-40-79 NE¼, Wyoming Oil Fields 5-A.
34-40-79 NE¼, Wyoming Asso. 26-AX
34-40-79 SE¼, Wyoming Asso. 18-A.
34-40-79 NE¼, Wyoming Asso. 19-AX.
15-40-79 NE¼, Wyoming Asso. 26-A.
22-40-79 SE¼, Wyoming Asso. 32-A.
27-40-79 NE¼, Wyoming Asso. 5-A.
35-40-79 NW¼, Wyoming Asso. 29-A.
24-40-79 NW¼, Wyoming Asso. 26-A.
3-39-79 SE¼, Salt Creek Cons. 34-A.
19-40-78 SW¼, Midwest Oil 21-A.
11-40-79 SE¼, Midwest Oil 6-A.
4-38-78 NE¼, Mammoth Oil 101.

Shut Down

22-40-79 NW¼, E. T. Williams 23-A.
34-40-79 SW¼, Boston Wyoming 35-A.
29-40-78 NW¼, Omaha Lusk Oil 1.
28-40-79 SW¼, Jupiter Oil 27-A.
25-40-79 SE¼, Midwest Oil 7-A.
2-39-79 NW¼, Wyoming Asso. 23-X.
7-39-78 SE¼, Chappell Oil 2.
3-39-79 NW¼, Duthie Oil 5.
10-39-79 NW¼, Hardendorf et al 1.
20-39-78 SE¼, Mutual Oil 1.
4-38-78 SE¼, R. C. Tarrant 1.
35-39-78 SW¼, Teapot Dome Synd. 15-A.
2-38-78 SE¼, Teapot Dome Synd. 34-A
2-38-78 NE¼, Teapot Dome Synd.
32-39-78 NW¼, Colossal Synd.
Rigs, 52; wells drilling, 109; total, 161.

LANCE CREEK

Wells Drilling

28-36-65 Tom Bell, Buck Creek Oil 3.
3-35-65 Bell, Buck Creek Oil 5.
5-35-65 Elliott, Western States O. and L. 2.
5-36-65 Schuricht, Ohio Oil 1.
5-35-65 Thompson, Ohio Oil 1.
26-36-65 Buck Creek Oil 1.

Shut Down

18-35-65 NE¼, Union Oil 1.
East Part, Clark Prod. Co. 1.
Wells Drilling, 8.

WARM SPRINGS, GRASS CREEK, ETC.

Rigs

23-44-93 Flavin, Ohio Oil 1.
5-47-90 Heltzler, Ohio Oil 1.
Gebo Dome, Utah Oil & Ref. 1.

Wells Drilling

19-46-98 Ridgeley, Midwest Ref. 17.
31-48-90 Brome, Ohio Oil 1.
18-46-98 Washakie, Ohio Oil 4.
23-42-90 SE¼, Markham et al.
26-46-100 Prod. and Ref. 1.
Thermopolis town lot, H. D. Curtis et al.
27-46-98 Columbus Oil.
16-46-93 Curtis Oil 1.
36-43-91 Urie O. and R. 1.
12-45-93 SW¼, Midwest Ref. 1.
11-45-97 SE¼, Midwest Ref. 1.
18-46-98 Meeteetsee, Midwest Ref. 19-A.
19-46-98 State, Ohio Oil 39.
20-46-98 Mill Iron, Ohio Oil 68.
12-45-97 SW¼, Midwest Ref. 1.
18-46-98 Wylie, Ohio Oil 19.
Warm Springs Field, Leslie Oil.
31-48-99 SW¼, Midwest Ref.

Shut Down

27-46-98 Rankin, Dickie Oil 1.
8-46-98 NW¼, Grass Creek Prod. 1.
17-46-98 NW¼, Tunador Oil 1.
27-41-91 Wyoming Missouri Oil.
Rigs, 3; wells drilling, 22; total, 25.

BIG HORN BASIN

Rigs

24-58-99 Elk 3, Ohio Oil 23.
32-56-97 Howell, Occidental Oil.
Crystal Creek, C. W. Litton.
Cowley district, C. W. Litton.

Wells Drilling

31-48-100 SW¼, Midwest Ref. 1.
30-58-99 Elk 5, Midwest Ref. 15.
33-56-97 Cross Gas, Ohio Oil 1.
30-58-99 Woods, Ohio Oil 14.
Lamb anticline, Vanguard Oil 2.
32-58-99 SW¼, Midwest Ref. 1.
30-56-97 Prod. and Ref. 1.
Torchlight Dome, Bruce Holding Co. 1.
32-58-99 NW¼, Thompson Elk Basin 1.
26-57-95 Tranesark Oil 1.
8-51-100 Sonners, Ohio Oil 1.
23-53-100 Union Oil 1.
34- 9-23 Boyd Oil 1.
35- 9-23 Elk 11, Midwest Ref. 2.

Shut Down

24-58-100 Beck et al.
Cody district, Pahaska Synd.
17-49-91 Frontier O. and G.
2-56-97 Allen Oil.
23-58-97 Greenless et al.
16-47-100 Big Horn Dev. Co.
Cowley district, Julius Williams.
Burlington district, Tatman Mt. Oil Co.
Deaver district, Montana Wyoming 1.
Rigs, 4; wells drilling, 23; total, 27.

LOST SOLDIER

Rigs

32-26-87 NW¼, Prod. Oil & Gas 1.
11-26-90 NW¼, Bair Oil 38-A.
36-25-89 NE¼, Prod. and Ref. 2.
33-26-88 SE¼, Prod. and Ref. 2.
10-26-90 U. S. Pet. 1.
16-25-86 NW¼, Gen. Pet. 4.
8-25-86 General Pet. 1.
31-25-86 Gov. land, General Pet. 3, 4.
22-26-87 Gov. land, Sand Hills Oil 1.
3-26-90 SW¼, Hughes Oil 3-B.
21-26-86 Portland Wyoming Oil 4.

Wells Drilling

14-26-90 NW¼, Bair Oil B-3.
3-26-90 SE¼, Bair Oil 39-A.
22-26-90 NE¼, Prod. and Ref. 2.
12-26-90 Texas Prod. 1.
7-26-89 NW¼, Prod. and Ref. 3, 4.
4-25-88 NE¼, Prod. and Ref. 2.
33-26-88 SE¼, Prod. and Ref. 2.
25-26-88 SE¼, Hughes Royalty 1.
35-25-88 SW¼, Prod. and Ref. 2.
35-26-88 NE¼, Prod. and Ref. 4.
24-26-87 SW¼, Prod. and Ref. 20.
34-26-88 SW¼, Kasoming Oil C-2.
25-26-88 SW¼, Kasoming Oil D-1.
34-27-90 S½, Annabell Wyoming 1.
9-25-96 SE¼, Sand Hills Oil 1, 2.
26-26-86 Portland Wyoming 1, 2, 3.
33-26-88 SE¼, Prod. and Ref. 1, 3.
2-26-90 SE¼, Prod. and Ref. 1.
11-26-90 Bair Oil 36-A, 47-A.
3-25-87 Gov. land, General Pet. 1.
29-26-87 Prod. and Ref. 1.
25-26-86 Prod. and Ref. 22.
22-26-89 Prod. and Ref. 1.
36-26-88 Ohio Oil 1.
1-23-89 Prod. and Ref. 1.
11-26-90 NW¼, Bair Oil D-3.
10-26-90 NE¼, Bair Oil C-2.
5-24-86 Wickersham, Ohio Oil 1.

Shut Down

2-24-87 Calhoun, Ohio Oil 2.
10-26-88 Renroh Synd. 1.
1-25-88 E½, M. and S. Synd. 1.
35-25-88 M. Armstrong 1.
11-26-87 Gov. land, Emery Synd. 1.
2-25-87 Gov. land, General Pet. 1.
16-25-86 Gov. land, General Pet. 3.
3-25-87 Gov. land, General Pet. 1.
31-36-86 Gov. land, General Pet. 1.
14-25-89 Gov. land, Columbia Oil 1.
16-26-89 U. S. Petroleum.
8-25-86 Gov. land, U. S. Waugh 1.
25-26-89 Gov. land, Commonwealth Pet. 1.
Rigs, 12; wells drilling, 47; total, 59.

ROCK RIVER DISTRICT

Rigs

3-17-76 Gov. land, Western Holdings Co.

Wells Drilling

34-23-79 NE¼, Central Pipe Line 1.
34-20-78 State, Ohio Oil 10, 11.
14-15-75 SE¼, Wyoming Hollow Basin 1.
26-21-79 Southwestern Pet. 2.
3-19-78 H. and C., Ohio Oil 2.
23-16-74 Gov. land, G. A. Briggs.
11-19-78 H. and C., Ohio Oil 2.
27-20-78 D. C. Co., Ohio Oil 2.
25-21-79 SE¼, Southwestern Pet. 1.

Shut Down

4-19-78 State, Hutton Lake Oil 1.
32-16-74 Gov. land, Spindle Top Oil 1.
18-15-75 Gov. land, Apex Ref. 1.
18-16-75 Gov. land, Pet. Oil Fields 1.
12-20-77 Gov. land, McLaughlin et al.
10-18-77 Gov. land, Carbon Oil 1.
11-19-76 Gov. land, Dutton Creek O. and G.
21-21-76 Gov. land, McMurray et al.
32-21-78 Gov. land, Ross et al.
20-18-77 Gov. land, Wyoming Rock Creek 1.
Rigs, 1; wells drilling, 20; total, 21.

FREMONT COUNTY

Rigs

23-32-95 Sand Draw Prod. and Ref. 2.
2-39-83 Chemical Dome, Lux Oil Corp.
Sage Creek, Washakie Synd.
29-34-92 Oliver et al.

Wells Drilling

15-6-2 SW¼, Union Oil 13.
6-6-2 SW¼, Union Oil 2.
Dutton Basin, Texas Prod. Co.
18-27-95 SW¼, Sage Creek Pet. 3.
24-23-96 Red Desert Oil Synd.
Lysite Dist., Miners Oil & Gas 1.
15-34-90 Ward Oil 1.
27-6-3 Kinney Coastal Oil 1.
9-32-95 Sand Draw, Prod. and Ref. 2.
15-32-95 Sand Draw, Prod. and Ref. 3.
14-32-95 Riverton Drilling Co.
7-28-92 NW¼, Southwestern Pet. 1.
8- 5- 2 Marine Oil 2.
17-27-95 Sage Creek Pet. 2.
Burley Dome, Burley Dome Oil 1.
26-5-2 Connolly Oil & Land.
Wind River district, Teton Pet. 1.
2-27-93 Fremont Con. Pet. 1.
25-27-92 American Workers Oil Fields 1.
14-28-93 American Workers Oil Fields 1.

Shut Down

Derby Dome, Derby Dome Oil 8, 9.
14-35-2 Prod. and Ref. 1.
Shoshoni district, Indian Oil 1.
Chemical Dome, Shoshoni Synd. 1.
Lower Muskrat, Minnesota Western 1.
16-38-93 Howe Oil & Gas.
McComb Dome, Northern Wyoming Oil 1.
Maverick Springs, Maverick Springs Dev. 1.
Dutton Basin, Seal Oil Asso.
Rigs, 4; wells drilling, 30; total, 34.

MULE CREEK

Shut Down

36-41-61 Western Dakota Oil 1.
30-39-60 Western States O. and L.
Wells drilling, 2.

OSAGE

Rigs

17-46-63 Baldwin et al.
McKenna Bros.
Supreme Pet.

Wells Drilling

10-45-61 Paul Young.
7-46-63 Tom Don.
31-46-63 Newcastle Oil.
17-46-63 Osage Oil Trust.
5-46-63 Dakoming Oil.

Shut Down

18-46-63 Noco Pet.
4-46-63 C. H. S. Co.
6-46-63 Bock Bros.
5-46-63 Independent Prod.
33-46-61 Paul Young.
9-46-63 Cody Osage Oil.
4-46-63 Doherty Interests.
31-47-63 Condit Petroleum.
17-46-63 Wilson & Warren.
20-46-63 Osage Upton Oil.
5-46-63 Sidney Oil.
28-46-61 Paul Young.
24-46-63 Fagan interests.
24-46-64 Midwest Ref. Co.
4-46-63 Atlas Oil.
19-46-63 Sinclair Wyoming 3, 4.
25-46-63 Fletcher Bros.
1-46-63 Webster Oil.
Rigs, 3; wells drilling, 24; total, 27.

NATRONA COUNTY

Rigs

22-37-81 California Oil 1.

Wells Drilling

18-33-83 NW¼, California Oil 5.
15-32-82 Danaher Synd. 1.
36-37-82 SE¼, Midwest Ref. 1.
31-40-80 Comet Synd.
9-34-82 Bradford Wyoming 1.
20-37-82 NW¼, Wyland Synd. 1.
Poison Spider Field, Fargo Oil 24, 36, 1
10-36-85 Boone Dome, New York Oil.
35-35-84 E½, Alaska Dev. 1.
35-35-84 W½, Alaska Dev. 2.
Two Bar Dome, Casper Synd. 1.
12-33-83 New York 9, 10.
9-35-85 New York Oil 4.

Shut Down

2-34-84 California Oil 1.
Johnson Ranch, Newton et al 1.
4-29-81 Kinney Coastal Oil.
12-34-84 Cheney et al.
Lox Anticline, Lox Synd.
Rigs, 1; wells drilling, 21; total, 22.

LINCOLN AND UINTAH COUNTIES

Rigs

3-26-113 Wyoming Reserve Oil 1.
12-29-93 Federal Drg. Co.
12-15-118 Prod. O. and G.
Waterfall Dome, Klo-ro-no Synd.

Wells Drilling

Corder Ranch, Beaver Oil Co.
30-14-118 Hyland O. and G.

Shut Down

Afton district, Wyoming Idaho Oil 1.
11-21-115 Waterfall district, Gulf Coast
Cretaceous Field, R. N. Co. 1.
28-28-112 Geo. Downley et al 1.
Big Piney, Lincoln Idaho 3.
Cumberland Dome, J. A. Moore.
1-29-112 Utterback Synd.
1-28-114 Chas. Lackey et al 1.
Big Piney, Piney Crescent Oil.
Dry Piney, Nippon Oil.
Waterfall Dome, Consol. Petroleum.
Carter Field, Wyoming Illinois Oil 1.
Fossil Field, Wyoming Pacific Oil.
Davison Dome, Gulf Coast Oil.
14-21-117 Hersman Oil.
Rigs, 4; wells drilling, 17; total, 21.

BAXTER BASIN

Rigs

27-17-104 SE¼, Montacal Oil 1.
7-17-103 Petrogas Oil.

Wells Drilling

10-16-104 SE¼, Midwest Ref. 29.
10-16-104 NW¼, Midwest Ref. 36.
26-17-104 NE¼, Associated Oil 1.
2-17-104 SE¼, Midwest Ref. 1.
24-17-104 SW¼, Montacal Oil 1.
36-18-104 NE¼, Midwest Ref. 1-X.
25-18-104 SE¼, Midwest Ref. 29.
23-17-104 Associated Oil 1.
36-17-104 NW¼, Prod. and Ref. 1.
22-16-104 AJP, Ohio Oil 1.
14-17-104 Hay, Ohio Oil 1.

Shut Down

30-18-104 Midwest Ref. 6-AX.
8-16-104 NE¼, Montacal Oil 1.
Rigs, 2; wells drilling, 13; total, 15.

MISCELLANEOUS

Rigs

LAK Ranch, Newcastle District, Furg
et al.
Dewey Dome, Mexico Wyoming Oil.
19-32-63 Teton Place Synd.
Moorcroft Dist., Fee and Rice.
15-51-67 Greytop Oil.
Little Missouri, Union Oil.
32-48-63 Wyo. Dev. Synd.
Rozet Dome, Omaha Synd. 1.

Wells Drilling

20-21-80 NW¼, Prod. and Ref. 1.
Fiddlers Creek, Frederick Oil & Gas
Buffalo district, Kinney Coastal 1.
20-21-80 Prod. and Ref. 3.
16-21-80 Prod. and Ref. 1.
28-47-65 Gose Synd.
Billy Creek, Carter Oil 4.
22-45-62 Shaw & Scott.
Colony district, Walter & Barnard.
Clay Basin, Prod. and Ref. 1.
Lingle Dist., Foreman et al.
21-42-82 Carter Oil 3.
8-68-65 Prod. and Ref. 1.
Rozet Dome, Rozet Dome Oil 1.
5-31-70 Douglas Dist., Frye & Dya.
17-48-82 Billy Creek, Carter Oil 3.
Glendo district, Nebraska Synd.
Vernon Dome, Walter Hargis et al.
9-41-80 Newton & Maxwell.
23-39-70 Womens National Oil 1.
16-44-62 Midwest Ref. 1.

Shut Down

16-42-79 Atlantic Drilling Co. 1.
Pickett Lake, Annabell Wyoming 1.
La Prele, Armour Synd.
Moorcroft Field, Southwest Oil.
Stroner Ranch, Illinois Wyoming Oil.
Cottonwood Dome, Baker Pet.
Moorcroft District, McWhorter Interests
Wakeman District, Mississippi Delta Oil.
17-50-68 Trail Creek Oil.
17-51-65 Houghton Oil.
Barger Ranch, Wyoming Hi Gravity Oil.
33-36-78 Turner Creek Oil.
Page Dome Crook County, Hover Bros.
Douglas District, Reliance Oil.
Douglas District, Ajax Wyoming Oil.
Horse Creek, National Oil.
7-37-72 Cheyenne River Oil.
26-27-61 Platte Wyoming Oil.
18-39-68 Glenco Oil & Gas.
11-31-71 La Bonte O. and G.
1-16-70 Blaiser Synd.
2-25-5 Lost Creek Cons.

Thornton Field, Neffsy Bros.
Rigs, 8; wells drilling, 44; total, 52.

MONTANA
CAT CREEK
Rigs
12-15-28 California Co. 4.
2-15-28 SE¼, California Co. 1.
Wells Drilling
9-15-27 NE¼, Peerless Oil 2.
23-14-28 NE¼, Winnett Pacific 1.
1-15-28 SE¼, Custer O. and G.
1-15-28 Mid Northern Oil 3.
12-15-28 NE¼, California Oil 3.
26-16-28 Republic Peerless Oil 1.
9-15-29 NE¼, Frantz Corp. 8.
7-15-29 NW¼, Fifty Six Pet.
7-15-29 NW¼, Hogan Oil 2.
12-15-28 NE¼, Shaffer O. and R.
10-15-29 Fifty Six Pet.
9-15-29 NE¼, Mid Northern Oil.
29-14-29 Flatwillow Oil 1.
27-15-30 Frantz Corp.
24-15-30 Absoraka Oil Dev.
Shut Down
23-15-30 A. B. Miller.
31-15-30 Helena Cat Creek Oil.
20-15-30 Montacal Oil.
8-15-29 Logan Corp.
15-15-30 Montana Synd.
24-15-30 Swartz et al.
11-15-30 Miles City Oil.
Rigs, 2; wells drilling, 22; total, 24.

KEVIN SUNBURST
Rigs
11-35-2 Stockmans Bank, Ohio Oil 2.
9-35-2 Bruins, Western Pet. Ex. 4.
14-35-2 Davey, Ohio Oil 9.
30-35-2 Carson, Securities Oil 1.
13-35-2 Barth, Hager Stevenson 2.
20-35-1 State, Potlatch O. and G. 1.
21-34-1 Stockmans Bank, Potlatch O. and G. 1.
20-33-2 Jarrett, Sunburst O. and G.
25-36-2 Kaskin, Ohio Oil 1.
4-35-2 Baker, Ohio Oil 9.
30-35-2 Broadwell, Hecla Oil 3.
20-35-2 Whitman, Homestake Exp. 1.
7-21-2 Jones, Olympic Oil 1.
Wells Drilling
20-35-2 McBride, Canadian American 1.
23-33-1 Webb, Shelby O. and G. 1.
29-35-2 Maughan, Swaney Oil 1.
25-34-2 Stannard, Wyomonta Oil 1.
15-35-2 Kenney, Western Pet. Ex. 2.
8-35-2 Swears, Mid-Northern Oil 3.
24-35-2 Zimmerman, Sunburst Wells 1.
14-35-2 Reeg, Kio-Ora Sunburst 2.
9-35-2 Howling, Mid-Northern Oil 5.
9-34-2 Howling, Mid-Northern Oil 5.
34-35-2 NW¼, Maybelle Oil 1.
11-34-4 Calironia Co. 1.
Howling lease, Carter Oil 1.
24-33-1 Shelby Synd. 1.
Andreich lease, Homestake Explo. 3, 4.
9-35-2 Swears, C. Beardsley 2.
29-36-2 Malcolm, National Explo. 1.
28-27-2 McAlpine, Spartan Oil 1.
20-35-2 Halter, Kevin Roberts 1.
20-35-2 Halter, Sunburst Production 2.
30-35-1 Emmons, Dakota Montana 1.
7-34-1 Carlson, Dakota Montana 1.
Shut Down
29-35-1 Bluhm, Mid Field Oil 1.
18-32-4 Beck Pet. 1.
8-35-2 McGowan, Montana Giant 1.
25-35-3 Stewart, Campbell 1.
17-34-2 De Groat, Shelby Kevin 1.
24-35-2 NW¼, Spartan Montana 1.
16-35-3 Godertz, Campbell 1.
36-35-3 Godertz, Jr., Campbell 1.
12-34-1 Peterson, Lucky Forty 1.
31-35-2 McGowan, Holding and Royalty Co. 1.
33-35-3 Campbell, Campbell 5.
16-34-2 NW¼, Rainbow Oil 2.
4-36-2 Coe Oil 1.
31-35-3 NW¼, Shaffer Oil 1.
1-34-2 NE¼, Sunburst O. and G.
35-35-3 California Co. 1.
Rigs, 13; wells drilling, 38; total, 51.

MISCELLANEOUS—MONTANA
Rigs
Livingston Dome, Whiteside et al.
Porcupine Dome, Stellar O. and G. 7.
Great Falls Dist., Virgelle Oil.
14-15-15 Fullerton Oil 1.
Near Hibbard, Hibbard Oil 1.
Wells Drilling
30-15-26 Winnett Shallow Field Synd.
32- 4-16 SE¼, Consolidated O. and G. 1.
34- 7-16 NE¼, California Co.
3-12-26 SW¼, Minnesota Flatwillow.
2-32-33 Smith, Homestake Exp. 1.
19-37-4 NE¼, Gladys Belle 1.
18-23-4 NE¼, Carter Oil 1.
2-36-5 Frazier et al 1.
29-21-14 Mid States Oil.
9-12-14 Oil Springs Dev. 1.
29-11-23 Montana Pioneer 2.
35- 7-24 Pennsylvania Oil Dev. 1.
22-25-50 Butler O. and G.
24-20-13 Continental Prod. 1.
16-25-17 Ohio Oil 2.
17-3-19 Snyder, Mid Northern 1.
20-25-5 Larsen, Walter Bright.
2-26-6 Jones, Walter Bright.
29-24-2 Markham, Midwest Ref. 1.
15-27-7 Kelly, Empire Oil 1.
22-23-13 Hager Stevenson.
27-20-13 Arrow Creek Oil 1.
McGinnis Dome, Shearard Synd. 1.
23-23-4 Flume Montana Giant 1.
4-27-6 NW¼, Gypsy Oil 1.
18-23-21 Lake, Carter Oil 1.
2-28-3 NE¼, Dry Fork Oil 1.
21-24-24 Phillips Dev. Co., Ohio Oil 1.
Bauley Dome, Montana Equipment Co.
Muddy Creek, Mountaineer Oil 1.
14-18-4 Eliakin Oil 1.
26-1-21 Hepp, Mid Northern 1.
18-16-26 Newdigate et al 1.
14-11-24 Devils Basin, Fifty-Six Pet.
15-37-7 Empire Montana Oil.
9-11-24 NW¼, Absoraka Oil Dev. 1.
1-1-21 NE¼, Grimsted & Brown.
Range Point, Flynn Bros.
Antelope Point, Hardtimes Oil 1.
2-26-6 Marion Edwards.
23-14-29 Whaley et al.
24- 4-21 Absoraka Oil Dev. 1.
26-10-29 Stellar O. and G. 6.
9-10-29 Stellar O. and G. 5.
7- 4-22 Security Pet. 1.
35-32-32 SE¼, Bowdoin O. and G.
26- 6 - 8 SW¼, Potter Basin Oil.
27- 7-13 Harlowton O. and G. 1.
17-11-29 Absoraka Oil Dev.
Wilsal Dome, Shields Valley Oil.
4-17-20 California Co.
10-13-34 Absoraka Oil Dev.
Great Falls Dist., Cascade O. and G.
22- 9- 3 Greater Great Falls Oil.
21-14-28 Black Hawk Oil.
2-22-26 Bitter Creek Oil.
2-32-33 Golden West Oil.
Shut Down
6-13-14 NE¼, Fulton Oil 1.
26-14-29 NW¼, Jackson Dome Oil.
18- 6-24 SE¼, Yellowstone Pet. Synd.
7-27- 7 Circle Oil 1.
9-11-24 Tri City Oil.
18-26-26 Walker Bros.
18-16-26 Morrow Oil.
25-17-22 Cosmos Oil.
12-11-23 Arsted Oil.
Devils Basin, Alberta Block Coal Co.
Big Coulee, Midland Pet.
3- 4-23 Hoosier Oil.
12-18-13 Arrow Creek Pet.
28-13-25 Wayne Pet.
3-18-20 Big Bud Oil.
26- 7-12 Elk Pet. Synd.
25-32-19 Bowes Structure Oil.
36- 2- 7 Gladys Belle Oil.
Coalwood Dome, Annamay Oil.
Hailstone Basin, Hailstone Basin Oil.
12-11-24 Van Wagenen et al.
Devils Basin, Montana Central Oil.
Devils Basin, Monarch Oil.
24-11-24 Van Duzen Oil.
12-11-15 Minnesoate Montana Oil.
35- 7-34 Red River Oil.
35- 5- 8 Portland Synd.
30- 2-21 Columbus Oil.
24- 5-17 Unit O. and G.
23- 2- 5 Fox et al.
19-11-23 Montana Pioneer 1.
23- 3-34 Davis Creek Synd.
33- 5-28 Beauvois Oil.
12-11-13 Kalispell Synd.
13-13-20 Omaha Pet.
32- 1-38 Tennessee Montana Oil.
6- 5-25 Grey Eagle Oil.
23-11-24 Allen Oil.
21-11-39 Success Ref. Co.
8-35- 1 Idaho Mont. 1.
20-30- 1 A. M. Barringer.
31-15-45 Crow Rock Oil.
1- 6-20 Bitter Root Oil.
6- 6-17 Armsted Oil.
1-10-21 Williams O. and G.
2- 2-26 Clarks Fork Oil.
25- 8- 9 Beaverhead Alberta Oil.

Classified Advertisements Pages 108-109

11- 1- 1 Ruby Rideg Oil.
2- 2-12 Montana Pacific Oil.
10-34-34 Mid Northern Oil.
13- 3-22 SW¼, Lawson Ritter.
Rigs, 5; wells drilling, 108; total, 113.

UTAH

MISCELLANEOUS
Wells Drilling
Boundary Butte, Midwest Oil 1.
34-25-21 Big Six Oil.
16- 2- 5 State, Western Empire Oil.
19-42-18 Gov. land, Monumental Oil.
35-42-14 Wilson Cranmer Co.
6- 2- 8 Ohio Oil 1.
Crescent Dome, Crescent Eagle Oil.
31-42-18 Union Oil of Utah.
Woodside Dome, Utah O. and R. 1.
Shut Down
13-14-19 Castledale Oil.
27-16- 4 Producers Oil.
Lakeside Dome, W. R. Holmes.
Diamond Fork, Franco Utah Oil.
Diamond Fork, Gustaven Oil.
17- 4- 6 Ute Pet., Utah Southern Oil.
25-13- 1 Cache Valley Oil.
Boxelder County, Nebeker interests.
2-17- 3 Utah Central Oil.
Moffat Dome, Uintah Exp. Co.
Harrisburg Dome, Virgin Oil.
Gainsville Dome, John Finnerty.
Evans claim, Uintah County, U. S. Oil.
Hill Creek, Hill Creek O. and R.
Hill Creek, Mutual Oil.
Rigs, 0; wells drilling, 24; total, 24.

WYOMING
WELLS COMPLETED

23-40-79 NW¼, Wyoming Oil Fields 10-A	250
17-39-78 Tract G, Ohio Oil 2	35
24-40-79 SW¼, Midwest Oil 26-A	1115
11-40-79 SW¼, Midwest Oil 22-AS	2030
36-40-79 NE¼, Wyoming Asso. 13-AX	230
34-40-79 NE¼, Midwest Oil 11-AX	260
2-39-79 NW¼, Midwest Oil 23-AX	256
2-39-79 NW¼, Midwest Oil 15-A	480
11-39-79 SE¼, Kasoming Oil A-12	200
11-39-79 NE¼, Kasoming B-18	120
5-39-78 SE¼, Marine Oil CR-1	75
5-39-78 SE¼, Marine Oil CR-2	75
15-40-79 SW¼, Prod. and Ref. 1	100
15-40-79 SE¼, Prod. and Ref. 4	400
8-39-78 NE¼, Western States O. and L. 33-A	75
19-40-78 SE¼, Continental Prod. N-3	150
32-40-78 SW¼, Continental Prod. B-5	870
29-40-78 NW¼, Kinney Coastal Oil	412
1-39-79 SE¼, Mutual Oil 34-AX	150
19-39-78 SE¼, Texas Prod. 4	200
32-40-78 SW¼, Frantz Corp. 36-A	300
35-40-79 NW¼, Wyoming Asso. 11-A	395
23-40-79 NE¼, Wyoming Asso. 26-A	428
35-40-79 NE¼, Midwest Oil 26-AS	400
15-40-79 SE¼, Midwest Oil 24-AXS	50
1-39-79 NE¼, Midwest Oil 23-AX	100
23-40-79 SE¼, Wyoming Oil Fields 26-A	733
14-40-79 SW¼, Wyoming Asso. 11-A	650
13-40-79 NE¼, Mountain & Gulf 36-A	235
34-29-78 SW¼, Mammoth Oil 301	130
10-38-78 NE¼, Mammoth Oil 102	225
29-39-78 NE¼, Mammoth Oil 111	100
32-36-65 Rohlff, Union Oil 2	gas
4-35-65 Cash, Ohio Oil 2	3000
31-58-99 Tip 2, Midwest Ref. 1	gas
23-48-91 Olympic Oil 1	dry
2-19-88 NW¼, Hatfield Oil 1	gas
26-16-77 Coughlin, Ohio Oil 1	400
10-36-94 NE¼, Myrin Oil 1	dry
2-33-95 NE¼, Apex Oil 1	dry
7-46-63 Elton Oil	25
35-35-84 E½, Alaska Dev. 3	dry
Wakeman Field, E. J. Rachua	15

Wells completed	43
Production	14,669
Dry	4
Gas	3
Gas production	71,000,000

MONTANA
WELLS COMPLETED

14-15-29 Green, Frantz Corp. 9	100
Green Tract, Mid Northern Oil 19	100
Wildshultz, Mid Northern Oil 8	100
24-35-2 Hagerty, Idaho Montana Oil 1	50
25-35-2 Standard, Beaver Oil 2	25
3-35-2 Davey, Ohio Oil 7	65
25-35-2 NE¼, California Co. 2	50
25-35-2 Boyd, Adams Land Co.	25
25-35-2 State, Empire Montana 2	50
4-37-3 NE¼, Griffith Oil 1	dry
9-34-2 Suhr, Sunburst Eline 2	dry
23-35-2 Zimmerman, Adams Sunburst	15
21-35-2 Halter, T. S. Hogan	30
22-35-2 Loreson, T. S. Hogan 1	40
4-35-2 Swears, Western Pet. Ex. 3	dry
8-34-2 Herley, Swartz Kevin	10
2-35-1 Sweetgrass Arch Consol.	30
30-35-2 Helmericks, Montana Giant	5
4-34-2 Ostrick, Sweetgrass Oil 2	400
7-34-2 Crawford, Swartz Kevin	dry
13-35-2 Kasilspell Kevin 1	dry
18-23-4 Bennett, Montana Giant 1	dry

Wells completed	22
Production	1095
Dry	6
Gas	0
Gas production	0

See Page 4

1663

Tret-O-litE

Reg. U. S. Patent Off.

PROCESS PATENTED. The Barnickel processes for treatment of cut oil and other petroleum emulsions by the use of chemical agents are protected by valid process patents issued by the United States and foreign countries.

The purchaser of TRET-O-LITE is licensed to practice the Barnickel processes to the extent permitted by the quantity of TRET-O-LITE purchased. He is not licensed to use any other chemical covered by the Barnickel patents, either alone or with TRET-O-LITE.

WM. S. BARNICKEL & CO.
St. Louis, Mo.

ATTENTION ~ OIL PRODUCERS

BERITE

A non-explosive and non-inflammable compound for the removal of paraffine, asphaltum, salt, and gypsum from Oil Wells, Gas Wells, Tanks and Lead Lines.

Will increase your production.

Has been used successfully in more than 1000 wells.

Send for our pamphlet on *"How Much the Paraffine Condition of Your Wells Costs You."*

Distributed by

OIL WELL SUPPLY CO
PITTSBURGH-U.S.A.
BRANCHES IN ALL THE OIL FIELDS

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for October

Runs

	Month	Daily Av.
*Prairie Pipe Line Co.	2,387,000	77,000
Gulf Pipe Line Co.	1,043,379	33,657
The Texas Co.	474,227	15,298
Magnolia Pet. Co.	909,711	29,346
Empire Pipe Line Co.	844,521	27,243
Cosden Pipe Line Co.	546,141	17,617
Sinclair Pipe Line Co.	517,281	16,687
*Other lines	7,006,000	226,000
Total October	13,728,260	442,848
Total September	13,995,248	466,507
Difference	266,988	23,659

Shipments

†Prairie Pipe Line Co.	2,500,871	80,673
Gulf Pipe Line Co.	1,474,651	47,570
The Texas Co.	404,424	13,046
Magnolia Pet. Co.	408,645	13,182
Empire Pipe Line Co.	800,966	25,838
Cosden Pipe Line Co.	650,357	20,979
†Sinclair Pipe Line Co.	1,327,428	42,820
*Other lines	5,735,000	185,000
Total October	13,302,342	429,108
Total September	13,181,119	439,371
Difference	10,263	

Stocks

*Prairie Oil & Gas Co.	23,000,000
*Prairie Pipe Line Co.	1,350,000
Gulf Pipe Line Co. & Gypsy Oil Co.	8,896,778
The Texas Co.	7,909,376
Magnolia Pet. Co.	7,994,555
Cosden Pipe Line Co.	3,345,257
Empire Pipe Line Co.	2,862,027
*Sinclair Crude Oil Purch. Co.	30,425,000
Carter Oil Co.	17,688,228
*Other lines	4,600,000
Total October	108,071,221
Total September	105,557,684
Difference	2,413,537

*Estimated. †Includes shipments of Texas crude oil.

Note—Stocks do not include approximately 7,200,000 bbls. of crude oil held in storage on private tank farms and leases.

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1920	1921	1922	1923
January	66,004	64,460	67,702	75,790
February	68,699	70,054	75,096	71,092
March	67,745	68,555	78,531	76,592
April	64,589	65,036	75,462	75,614
May	63,937	65,466	77,592	77,365
June	68 750	62,438	76,193	77,592
July	66,489	59,486	76,435	71,879
August	63,861	64,888	79,387	76,910
September	68,102	60,110	78,512	72,358
October	65,066	57,688	77,209	76,256
November	62,758	58,470	75,813	
December	60 975	61,000	73,351	

Daily Average Shipments

The following tables gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1920	1921	1922	1923
January	98,835	115,550	119,792	171,067
February	107,146	96,736	111,362	164,219
March	110,777	84,168	127,753	185,487
April	114,090	101,015	127,068	179,751
May	110,219	100,253	127 840	177,103
June	102,598	105,037	137,638	173,598
July	112,340	97,096	137,872	168,330
August	122,296	101,652	153,275	142,766
September	127,131	117,440	158,761	137,266
October	122,891	105 728	165,345	134,597
November	117,730	121,803	165,677	
December	117,201	104,023	172,861	

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1921	1922	1923
January	7,916,353	16,297,858	14,040,567
February	8,721,878	17,009 293	14,028,437
March	9,818,766	16,877,937	13,873,146
April	10,369,941	16,777,842	13,737,575
May	11,224,694	16,948,962	13 816,622
June	12,338,126	16,810,169	14,541,253
July	13,798,698	16,669,286	14,645,584
August	15,155,633	16,235 229	14,770,539
September	15,525,750	16,228,545	14,803,444
October	15,761,079	15.757,746	14,504,111
November	14,971,071	15.171,972	
December	15 854,741	14.323,765	

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

	Receipts	Shipments	Stocks
1922—			
October	3,368.58	4,783.61	29,313.13
November	3,052.75	2,230.18	30,135.70
December	3,076.36	1,292.84	31,919.22
1923—			
January	2,798.55	2,461.36	32,256.41
February	2,692.93	932.33	34,017.01
March	2,978.88	12,417.00	24,578.89
April	3,529.12	3,054.09	25,053.92
May	3,538.73	4,856.42	23,736.23
June	2,927.71	4,743.78	21,920.16
July	2,996.64	1,471.57	23,445.23
August	3,199.07	3,769.34	22,874.96
September	2,829.79	5,822.38	19,882.37
October	2,694.23	5,251.81	17,324.79

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Nov. 1	2,466,238.64
Runs from wells	544,861.93
Other receipts	119,965.33
Regular deliveries	228,961.55
Other deliveries	474,479.61

The amount of Illinois oil run by the Tide Water Pipe Line Co. on October was 32,005.16 barrels, and deliveries were 115,-851.27 barrels. Adding these figures to those of the Illinois Pipe Line Co., makes the runs and deliveries from the Illinois Field as follows:

	Runs	Deliveries
1922—		
October	618,459.82	454,005.38
November	566,508.03	434,681.97
December	552,069.33	391,868.37
1923—		
January	599,239.86	470,958.84
February	496 421.79	382,566.83
March	625,006.81	472,920.76
April	521,910.87	423,548.43
May	624,107.98	523,515.00
June	582,511.82	509,137.77
July	594,653.42	489,269.17
August	594,747.94	367,152.82
September	542,561.59	306,925.40
October	576 867.09	347,812.82

The Tide Water Pipe Co., Ltd., also delivered in October 192,614.57 barrels of Oklahoma oil. The total deliveries of all grades by the Tide Water were 477,869.02 barrels.

Runs from Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept., '23	Oct., '23
Nat. Transit	188,712.66	211,486.92
S. W. Pa. P. L.	82,300.00	93,352.02
Eureka P. L.	368,672.93	430,327.54
Buckeye P. L. (Macksburg)	250,485.71	280,073.58
Buckeye P. L. (Cleveland)	16,280.77	19,218.85
Buckeye P. L. (Lima, etc.)	139 388.04	144,889.47
Indiana P. L.	14,150.22	14,811.54
Cumberland P. L.	386,752.33	399,736.19
N. Y. Transit	15,261.47	17,402.53
Tide Water P. L.	149,139.63	163,016.59
Pure Oil P. L.	177,281.66	190,792.38
Emery P. L.	31,486.08	35,209.98
Paragon Ref.		
Indian Ref.	309,242.57	315,406.99
Paragon Dev.	32,320.51	31,501.81
Pittsburgh P. L.	8,272.29	10,612.83
Swiss P. L.	995.34	1,015.89
Riggs Ref.		5,083.17
Total	2,170,742.30	2,363,937.27
Daily av.	72,358.08	76,256.04

Note—Indian Refining Co. also reported other receipts of 92,674.20 bbls. Paragon Refining Co. had other receipts of 117,-513.75 bbls. Paragon Development Co. had other receipts of 5,932.65 bbls. Pittsburgh Pipe Line had other receipts of 2,587.79 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept., '23	Oct., '23
Nat. Transit	412,333.27	497,929.96
S. W. Pa. P. L.	261,116.40	283 546.24
Eureka P. L.	130,178.48	126,716.26
Buckeye P. L. (Macksburg)	86,985.91	
Buckeye P. L. (Cleveland)	1,056.36	
Buckeye P. L. (Lima, etc.)	693,616.91	
Indiana P. L.	924,686.09	
Cumberland P. L.	160,116.97	
Southern P. L.		
Crescent P. L.	73,331.96	
N. Y. Transit	359,939.97	
Northern P. L.	69,794.27	
Tide Water P. L.	180,612.43	
Pure Oil P. L.	173,186.23	
Emery P. L.	31,492.26	
Paragon Ref.	114,947.24	
Indian Ref.	294,144.15	
Paragon Dev.	37,152.37	
Pittsburgh P. L.	11,341.66	
Swiss P. L.	1,939.86	
Riggs Ref.		
Total	4,017,972.79	
Daily average	137,255.76	

Gross Stocks

The gross stocks held by various pipe lines in the oil producing section of [illegible] York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of September and October were as follows:

	Sept., '23	Oct., '23
Nat. Transit	1,197,343.90	1,197,3[illegible]
S. W. Pa. P. L.	924,128.98	879,1[illegible]
Eureka P. L.	1,934,234.44	2,004,5[illegible]
Buckeye P. L. (Macksburg)	492.970.70	500,7[illegible]
Buckeye P. L. (Cleveland)	12,414.25	20,1[illegible]
Buckeye P. L. (Lima, etc.)	4,214,807.68	4,305,6[illegible]
Indiana P. L.	681,376.15	664,4[illegible]
Cumberland P. L.	732,274.03	667,3[illegible]
Southern P. L.	959,768.25	1,027,4[illegible]
Crescent P. L.	78,603.29	69,1[illegible]
N. Y. Transit	1,739,879.71	1,467,3[illegible]
Northern P. L.	930,869.95	864,6[illegible]
Tide Water P. L.		
Pure Oil P. L.	293,002.25	323,5[illegible]
Emery P. L.	5,811.39	6,7[illegible]
Paragon Ref.	180,341.45	166,6[illegible]
Indian Ref.	400,841.76	516,7[illegible]
Paragon Dev.	11,121.59	10,0[illegible]
Pittsburgh P. L.	9,171.35	9,3[illegible]
Swiss P. L. Co.	4,482.75	2,0[illegible]
Riggs Ref.		1,1[illegible]
Total	14,803,443.87	14,504,1[illegible]
Increase	32,905.37	
Decrease		299,3[illegible]

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of September and October, showing the gross stocks in the above fields:

	Sept., '23	Oct., '23
Pennsylvania	3,601,488.55	3,791,[illegible]
Lima	888,203.63	937,3[illegible]
Kentucky	1,998,875.17	1,964,[illegible]
Mid-Continent	7,951,689.79	7,244,[illegible]
Illinois	363,186.73	565,[illegible]
Total	14,803,443.87	14,504,1[illegible]

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Av. bbls. per wk.—	ATLANTIC PORTS						GULF COAST PORTS					Total All Ports
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	
July	110,750	18,750	517,000	185,250	121,750	952,500	.....	139,750	.....	.....	139,750	1,092,[illegible]
August	116,067	51,709	688,485	222,873	151,970	1,231,104	.....	24,612	219,030	.....	243,642	1,474,[illegible]
September	205 600	47,400	616,200	124,200	126,600	1,000,000	.....	140,600	.....	.....	140,600	1,140,[illegible]
October	195,000	56,000	626,000	220,000	107,000	1,178,000	.....	208,000	.....	.....	208,000	1,386,[illegible]

AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Av. bbls. per wk.—	ATLANTIC PORTS						GULF COAST PORTS					Total All Ports
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	
May	114,665	128,750	256,500	109,250	153,750	662,915	335,250	227,500	298,500	63,500	924,750	1,587,[illegible]
June	62,800	84,200	358,200	153 400	161,800	757,600	301,000	228,400	212,400	45,800	787 600	1,545,[illegible]
July	71,750	116,250	451,500	112,000	218,750	970,250	367,750	280,000	208,250	23,000	879,000	1,849,[illegible]
August	116,065	89,113	374,613	102,970	197,127	879,888	338,485	266,224	234,388	45,633	1,296 730	2,175,[illegible]
September	53,600	113 000	353,200	132,000	149,600	801,400	355,200	279,400	176,000	44,800	714,200	1,515,[illegible]
October	91,250	48,000	298,500	134,000	204,000	800,750	247,000	352,500	95,000	125,000	707,000	1,507,[illegible]

PRODUCTION BY MONTHS AND DAILY AVERAGE PRODUCTION IN THE U. S. FOR 12 MONTHS

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Wyoming Montana	Other Fields	Total
1922—										
November:	Month	14,035,537	12,613,560	8,676,000	2,646,091	1,023,450	2,529,150	2,908,800	3,205,290	47,637,[illegible]
	Daily average	467,818	420,452	289,200	85,261	34,115	84,305	96,960	106,483	1,587,[illegible]
December:	Month	15,426 810	13,185,416	8,707,931	2,649,900	1,596,500	2,463,291	3,108,866	3,149,445	50,288,[illegible]
	Daily average	497,639	425,336	280,901	82,330	51,500	79,461	100,286	101,595	1,623,[illegible]
1923—										
January:	Month	16,457,445	13,328,574	8,881,009	2,826,611	2,317,002	2,428,018	3,124,707	3,423,516	52,786,[illegible]
	Daily average	530,885	425,817	286,484	91,181	74,742	78,323	100,797	110,436	1,702,[illegible]
February:	Month	16,426,759	12,045,020	7,663,992	2,748,660	2,258,984	1,084,008	2,922,192	2,907,340	48,056,[illegible]
	Daily average	586,670	444,465	273,714	91,622	80,678	67,286	104,364	104,405	1,716,[illegible]
March:	Month	19,608,192	13,955,828	8,462,783	2,847,040	2,970,575	2,312,600	3,274,778	3,464,529	56,896,[illegible]
	Daily average	632,525	450,188	272,993	91,840	96,825	74,600	105,638	111,759	1,835,[illegible]
April:	Month	20,695,959	14,399,610	8,403,240	2,768,052	2,766,000	2,160,300	3,584,048	3,281,340	58,068,[illegible]
	Daily average	689,865	479,987	280,108	89,292	92,200	72,010	116,947	109,378	1,935,[illegible]
May:	Month	21,535 365	15,658,782	8,932,000	2,805,750	3,389,000	2,176,000	3,566,600	3,546,400	61,609,[illegible]
	Daily average	694,689	505,122	288,129	93,525	109,323	70,161	115,051	114,400	1,987,[illegible]
June:	Month	22,667,106	15,572,730	8,817,000	2,797,830	3,078,990	1,981,800	3,385,600	3,401,400	61,702,[illegible]
	Daily average	755,570	519,091	293,900	93,261	102,633	66,066	122,853	113,380	2,056,[illegible]
July:	Month	25,262,082	15,260,184	10,662,000	2,448,566	2,859,000	2,012,000	4,143,400	2,788,600	65,435,[illegible]
	Daily average	814,906	492,264	343,935	78,986	92,226	64,903	133,657	89,955	2,110,[illegible]
August:	Month	26,440,005	14,049,076	11,454,000	2,316,320	3,113,000	2,078,000	4,180,000	3,473,300	67,303,[illegible]
	Daily average	852,903	453,196	369,484	74,720	100,419	67,032	134,861	112,043	2,170,[illegible]
September:	Month	25,762,500	12,812,220	12,287,000	2,234,130	3,350,000	1,855,000	4,449,500	3,262,800	66,013,[illegible]
	Daily average	858,750	427,074	409,567	74,471	111,666	61,834	148,317	108,760	2,200,[illegible]
October:	Month	24,576,000	12,961,782	14,903,000	2,336,346	3,046,100	1,861,000	3,460,000	3,468,200	66,612,[illegible]
	Daily average	792,787	418,122	480,742	75,366	98,263	60,032	111,613	111,877	2,149,[illegible]
	Twelve months	248,893,760	165,842,782	117,849,954	31,425,296	31,768,501	24,940,167	42,108,491	39,372,160	702,201,[illegible]
	Total daily average	681,901	454,391	322,877	86,097	87,037	68,329	115,366	107,869	1,924,[illegible]

Contract Now For Your

1924

Tube Requirements

There are many advantages in getting your tubes on a regular contract basis—a specified number of tubes per month. Inquire now about our 1924 prices and "Monthly Contract" Plan covering.

Calorized Tubes

When you contract for your monthly supply of Calorized Tubes, you do more than simply insure the on-time delivery of the tubes you want.

You automatically cut to minimum the number of tube replacements necessary each month.

Calorized Tubes resist (as can no unprotected, untreated steel) the ravages of oxidation, corrosion, coke deposits and carburization. Calorized tubes withstand heat up to 2000° F. in the surrounding gases, greatly reduce corrosion, will not soak up carbon nor readily accumulate coke deposits on their smooth, semi-glossed inner surface.

Use Calorized tubes throughout and ask for quotations on your estimated requirements. Get the 1924 prices on a contract basis.

The Calorizing Co.

Oliver Building, Pittsburgh

Eastern Office: 50 Church St., New York

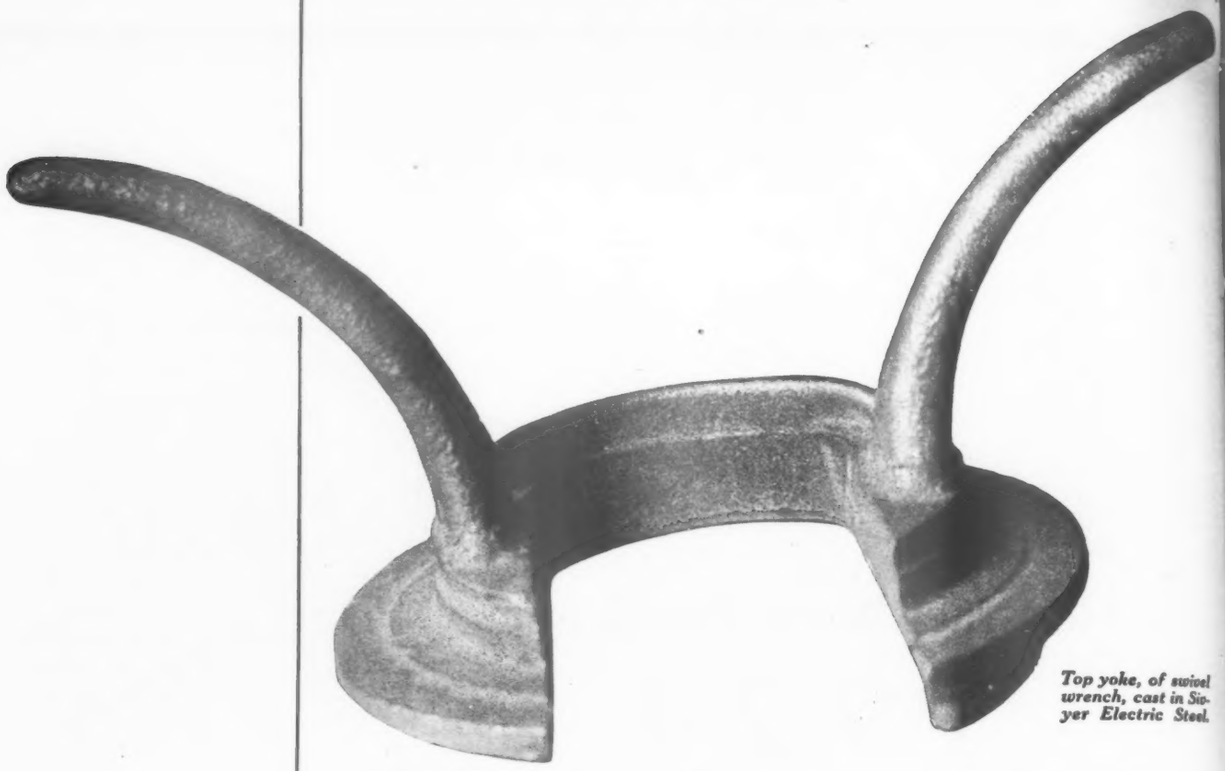
DISTRICT OFFICES:

224 S. Michigan Ave., Chicago, Ill. — **2-220 General Motors Bldg., Detroit, Mich.** — **424 West Bldg., Houston, Texas** — **720 Commerce Bldg., Kansas City, Mo.**

PROTECTION FOR METAL

Calorizing

50



Top yoke, of swivel wrench, cast in Sivyer Electric Steel.

Where Iron Breaks and Forgings are Impractical

THE swivel wrench, to which the top yoke shown above belongs, is winning the favorable attention of many buyers. Its advantages are not confined to its effective design, but include the fact that the top yoke is cast in Sivyer Electric Steel. If it were made of gray iron, it would have a tendency to break under strain. If it were made of malleable iron, it would have a tendency to bend, and if it broke it could not be welded. It is impractical to forge because of its design. As cast in Sivyer Electric Steel it is extraordinarily elastic and strong—and if it should ever break, it could be welded. These and many other advantages of Sivyer Electric Steel are leading more and more manufacturers of oil-well machinery and tools to use it where they formerly used iron or forgings. Its interior integrity, trueness to pattern and honest surfaces provide the flawless quality and unfailing strength that the men in the field demand.

Sivyer castings can be forged and welded

SIVYER S CASTINGS

DEPENDABLE

Send Blue Prints

During the last seven years, many manufacturers who were having difficulty with forged parts—or with ordinary steel castings—have come to us for a solution of their difficulties.

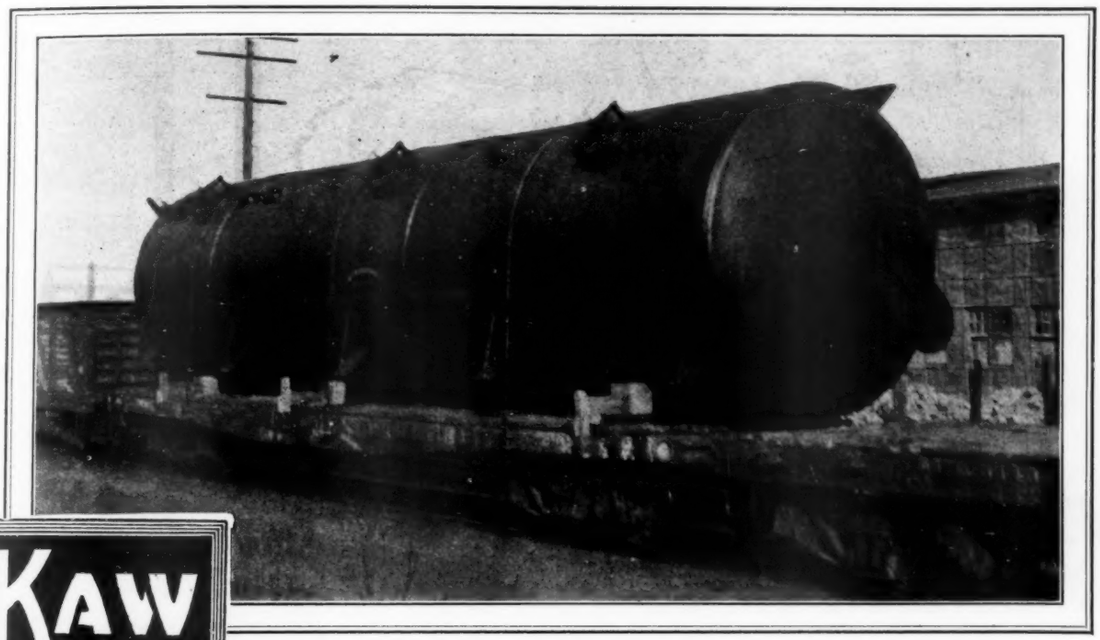
Very often, of course, the manufacturer's problems arise from the shortcomings of ordinary cast steel. When certain sections of a design vary sharply in thickness, it is difficult to cast them in ordinary steel. Open hearth practice does not permit the high temperature necessary for pouring extremely thin sections or intricate design.

With Sivyer Electric Steel and with Sivyer developments of molding practice, many things can be done that are impractical to open hearth steel.

If you are having trouble with parts that in the past have been hammer forged, or cast in ordinary steel, send us your blue prints together with a statement of your difficulties. We will be glad to study the problems involved and recommend possible solutions, without obligation on your part.

SIVYER STEEL

SIVYER STEEL CASTING COMPANY, MILWAUKEE



KAW

Quick Shipment
on KAW Refinery Equipment

No matter how large or small your order or what your requirements may be, you are assured quick shipment and dependable quality from KAW.

In addition to special specification jobs promptly made to order, we keep a large stock of standard refining equipment ready for immediate shipment. Our modern machinery, our large force of skilled workmen, our never ceasing determination to better serve you—all mean service and satisfaction.

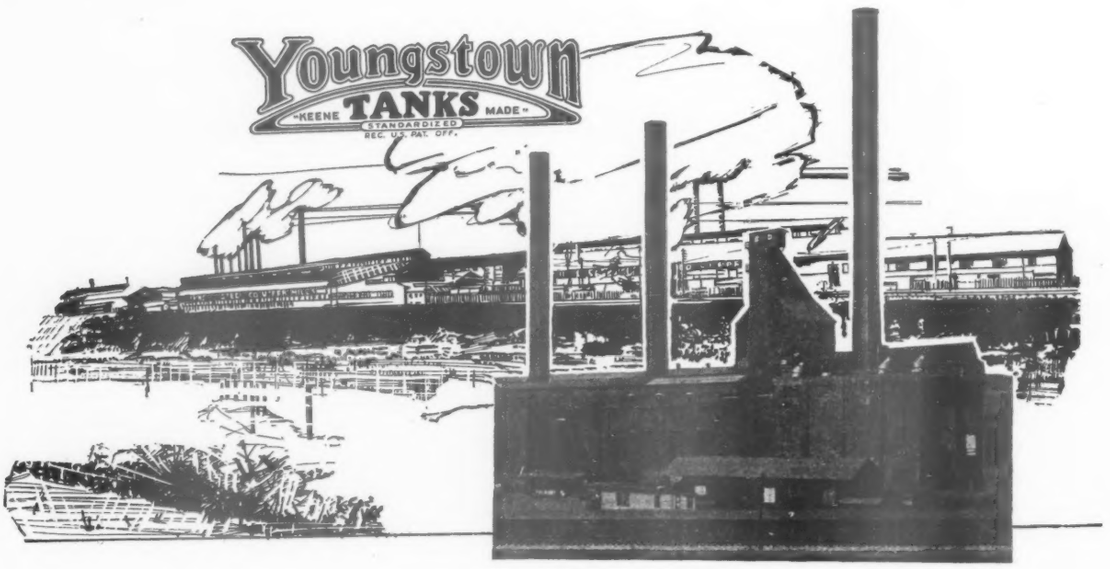
High Pressure Stills, Condenser Boxes, Agitators, Storage Tanks, Towers, Etc.

WRITE OR WIRE FOR SPECIFICATIONS AND PRICES

KAW BOILER WORKS COMPANY

Sales Office: 1403 Waldheim Bldg., Kansas City, Missouri

Plant: First and Walker Avenue, Kansas City, Kansas



"Youngstown" Steel Stacks Which Compel Manufacturer's Interest

Write on your business stationery for a free copy of Bulletin 500, fully illustrated and containing the most valuable compilation of tables, specifications, diagrams, conversion factors and general information ever published.

THE inset photograph of a "Youngstown" steel stack shows one of the largest stacks ever built in this country. It is 14 ft. in diameter from base to top and extends 300 ft. into the air above its foundation which is a steel super structure 65 ft. high. The total height therefore is 365 ft. The stack is self supporting. It was designed by our engineering staff and was built and erected by this company.

The YBT Co.

YOUNGSTOWN BOILER & TANK Co.
YOUNGSTOWN, OHIO.

YBT Co.

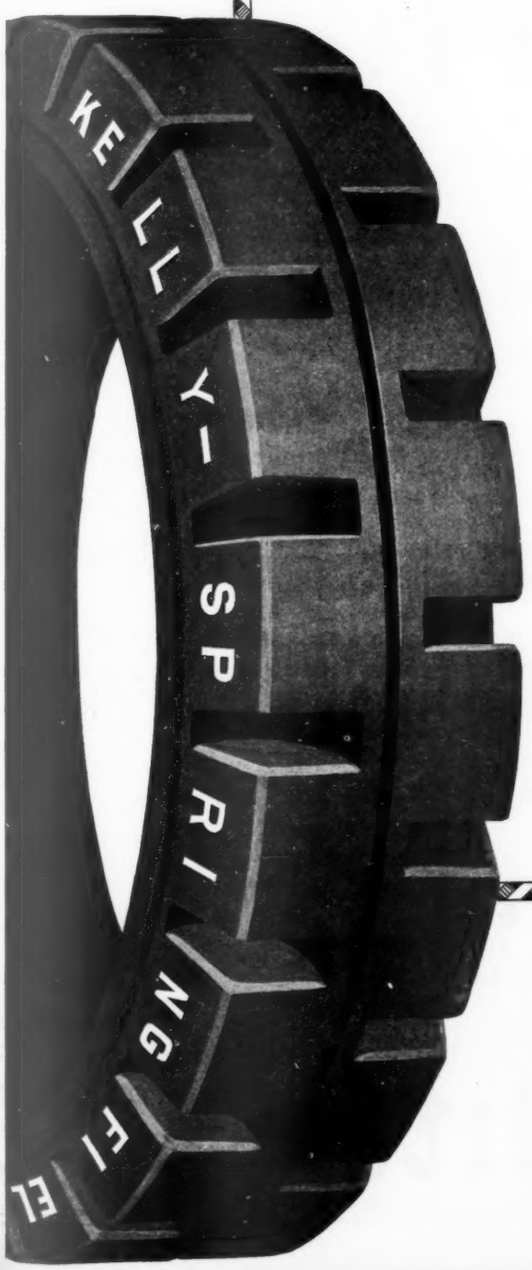
The reason why Kelly Kats are popular

Speaking of the remarkable combination of qualities offered by Kelly Kats, Mr. Chas. F. Harris, manager of the Cities Service Oil Co., of Park River, N. D., says:

> "I find the increased mileage alone received from Kelly Kats would make them a good buy and in addition their resiliency reduces repair bills and the increased traction enables me to drive my truck on all kinds of roads through plowed and stubble fields, where I could not go with solid tires. In fact, since using Kelly Kats, I have thrown away my tire chains."

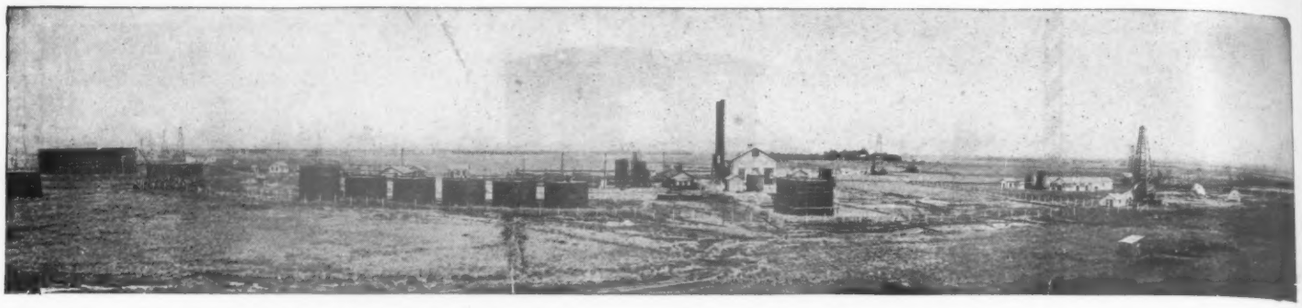
Other truck tires have been made which closely resemble Kelly Kats in appearance but none that equal them in service rendered.

This is the reason that Kelly Kats have continued to grow in popularity until today they are the most widely used truck tires on the market.



There are no Caterpillar tires but Kelly Kats

KELLY-SPRINGFIELD TIRE COMPANY
250 West 57th Street New York, N. Y.



YOU CAN PREVENT TANK BOTTOMS

A Tret-O-Lizer, inserted on the flow line to your storage tanks will prevent any "B. S." ever accumulating.

That portion of the production which is emulsified with water and would ordinarily accumulate at the bottom of the tanks as tank bottoms, is acted on by the Tret-O-Lite, which "breaks" the emulsion. Only free oil and free water enter the storage tanks. Separation is thus complete and no "B. S." forms.

You are saved the trouble of gathering the "B. S." from the tanks and treating it, and that part of the oil is saved which is not reclaimed by many methods of treating "bottoms."

Producers whose wells make only 1 to 3% of emulsion consider it well worth while to install Tret-O-Lizers and rid themselves of the "B. S." nuisance.

The tanks shown above receive the production of several leases following its treatment with Tret-O-Lite. As much as 25,000 barrels of crude has flowed into these tanks in a single day. Separation of the oil and water is complete. No. "B. S." is left.

We will be glad to have our nearest field representative call on you, investigate conditions on your lease, and recommend the type of Tret-O-Lite installation best adapted to your needs.

WM. S. BARNICKEL & CO.
St. Louis, Mo.
Offices and Plant: Webster Groves, St. Louis Co., Mo.

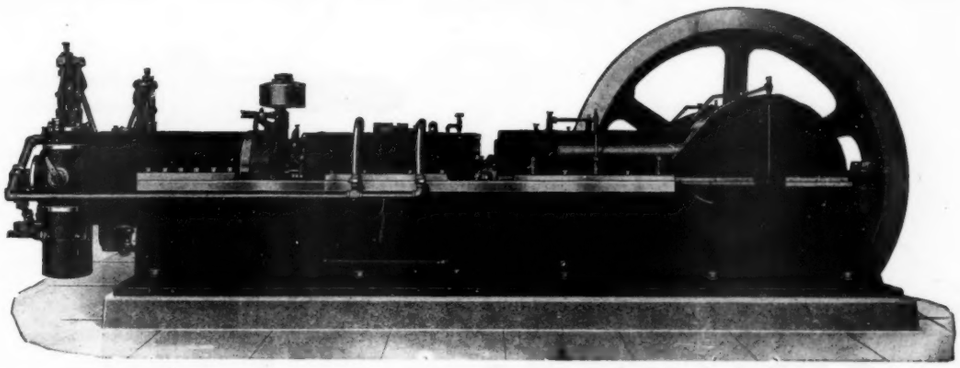
130

FOR PREVENTING ACCUMULATION OF TANK BOTTOMS.

Tret-O-lite
Reg. U. S. Pat. Off.

FOR TREATING TANK BOTTOMS AND CUT OIL.

INTERPOSED TYPE MILLER GAS COPMRESSOR



View of Watts-Miller direct gas engine driven compressor for natural gas. Compressor cylinder is INTERPOSED, that is, the compressor cylinder is located in the most advantageous position—i. e., between the power cylinder and the crosshead.

The INTERPOSED arrangement has the compressor cylinder located between the power cylinder and the crosshead. A second crosshead and piston rod are avoided. Only one crosshead and one piston rod are employed. Struts or tie rods are avoided.

Struts or tie rods break from the bending effect to which they are subjected at every stroke by parts being out of alignment, either from initial errors or resulting from wear. Also struts or tie rods occasionally buckle from accidental causes.

Close alignment is easily secured at the outset between the power cylinder, compressor cylinder and crosshead. This accurate alignment is maintained because with the interposed arrangement there is very slight tendency for these parts to wear out of alignment.

Complete ACCESSIBILITY through employment of flat bed with cylinders bolted on top of bed. Either the power cylinder or the compressor cylinder may be removed without disturbing the other. Power piston or compressor piston removable without moving either cylinder.

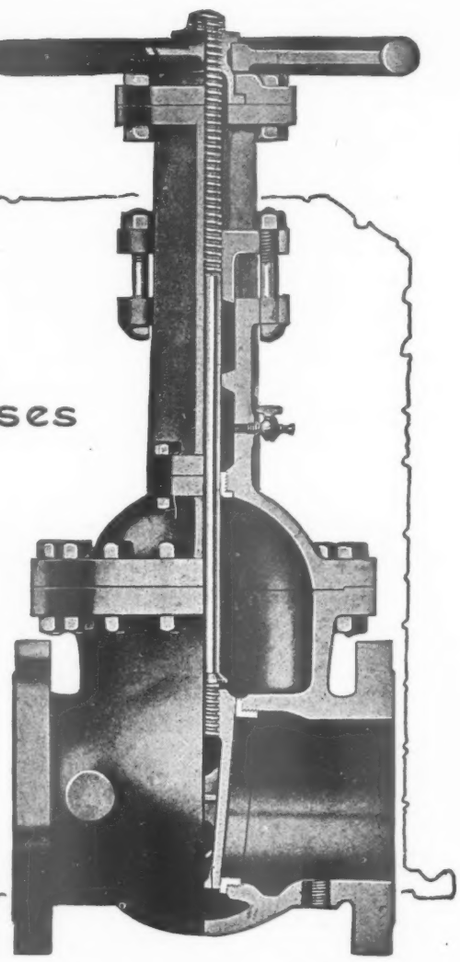
Only one crosshead and crosshead guides, only one piston rod, no struts or tie rods—therefore minimum number of parts, minimum number of bearings, lowest repair cost, lowest friction, smallest consumption of lubricating oil, longest life and largest volume gas pumped for given horse power capacity.

The Miller Improved Gas Engine Company

Factory at Springfield, Ohio

Branch Sales Office and Warehouse for Service and Repairs: 323 North Cheyenne Ave., Tulsa

CHAPMAN



Cast Steel
GATE VALVES
For Cracking Processes

Designed and
Constructed for
ALL PRESSURES
and Temperatures
up to
1000 degrees Fahr.

The Chapman Valve Manufacturing Co.
Indian Orchard, Mass., U.S.A.

BRANCHES:

New York	Syracuse	San Francisco	Houston
Boston	Pittsburgh	Los Angeles	Atlanta
Chicago	Philadelphia	Cleveland	Tulsa

VALVES

What Does It Cost

To Drop A String of Tubing

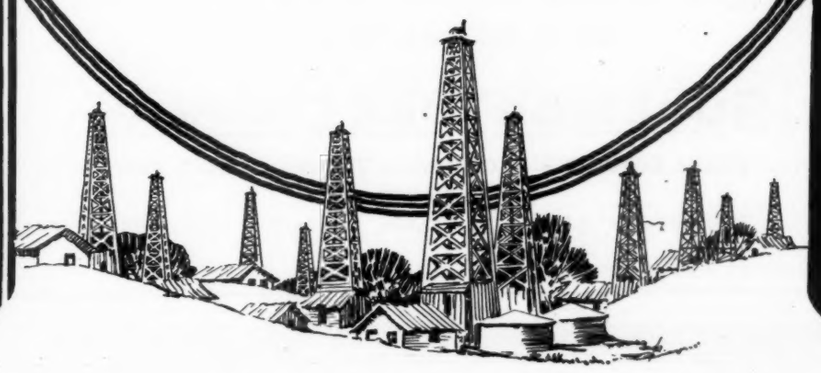
?

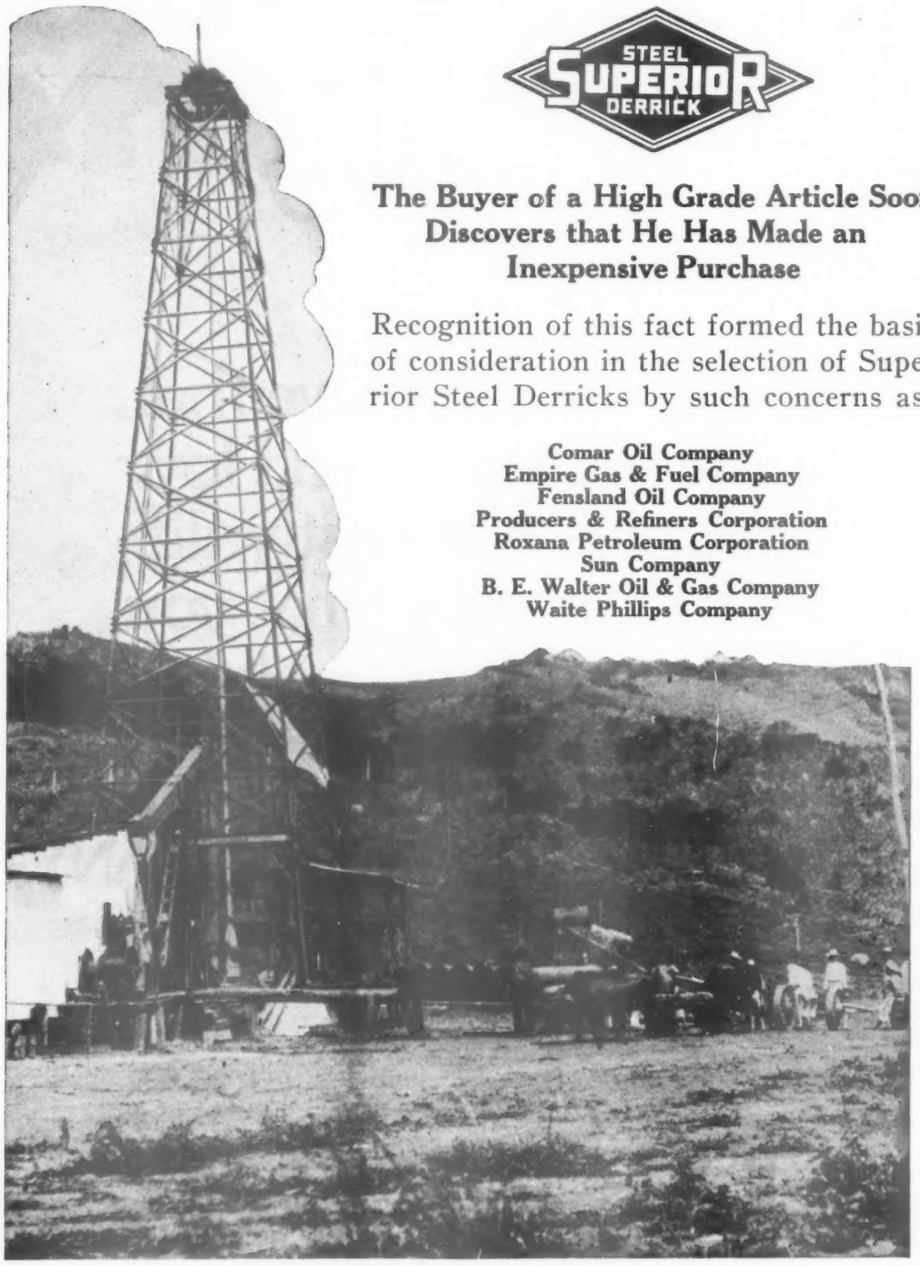
If you want to prove that low price pipe and low cost pipe are vastly different, consider what you pay each time a string of cheaper tubing parts

READING IRON COMPANY
READING, PENNA.
Oil Well Supply Co., Distributors

EST. READING 1848

READING
GUARANTEED GENUINE
WROUGHT IRON PIPE





STEEL SUPERIOR DERRICK

The Buyer of a High Grade Article Soon Discovers that He Has Made an Inexpensive Purchase

Recognition of this fact formed the basis of consideration in the selection of Superior Steel Derricks by such concerns as:

Comar Oil Company
Empire Gas & Fuel Company
Fensland Oil Company
Producers & Refiners Corporation
Roxana Petroleum Corporation
Sun Company
B. E. Walter Oil & Gas Company
Waite Phillips Company

One of the 84-foot Standard Superior Steel Drilling Derricks now in use by the Beacon Sun Company in the Valera District of Venezuela.

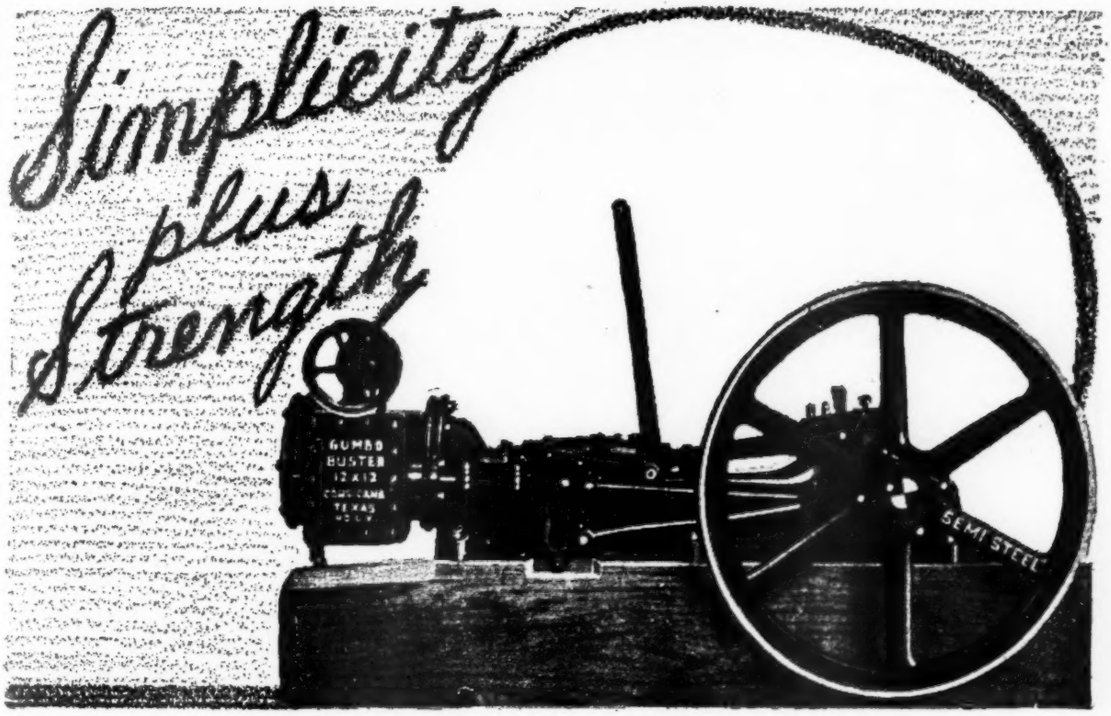
Ask the driller who has used one

SUPERIOR TUBE COMPANY

STEEL DERRICKS CASING TUBING LINE PIPE

KANSAS CITY, MO.

PITTSBURGH TULSA DALLAS CASPER ST. LOUIS



Gumbo Buster Drilling Engine
Model "A"

To stand the severe service in the oil field, your drilling engine must have exceptional strength, and should be of simple construction. The "Gumbo Buster" Model "A" Drilling Engine meets these requirements. Every engine is thoroughly tested before leaving the plant—assuring dependability.

—Crank shaft is made of best open hearth carbon steel, and the crank pin and journals are ground to a limit of 2 one-thousandths of an inch over or under size.

—Connecting rod is forged from open hearth steel—not cast, and is fitted with the best bronze crank pin and cross head brasses.

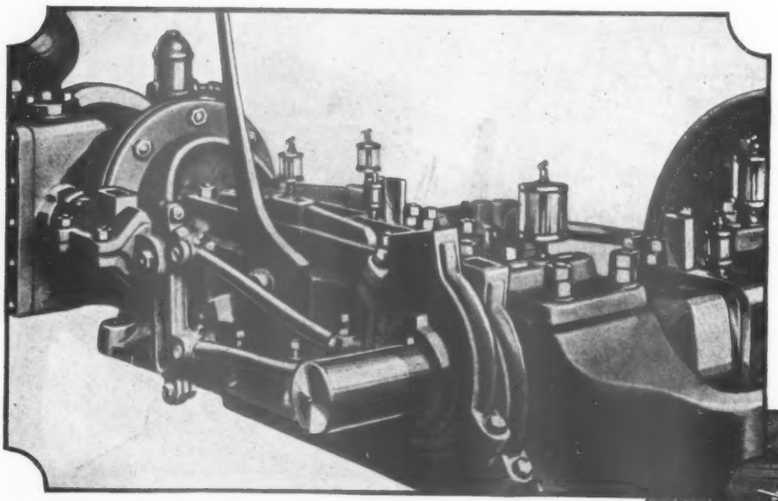
—Main crank shaft bearings are of pillow box type, fitted with quarter boxes.

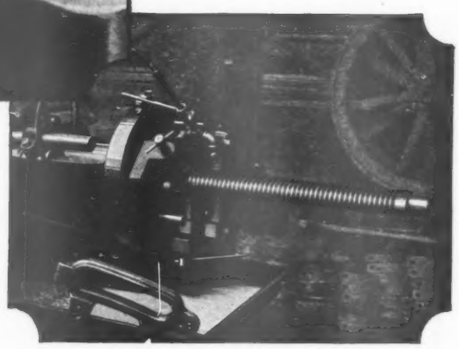
—Fly wheel furnished for either cable or rotary drilling.

Write for complete details and prices

Republic Supply Co. Distributors
Texas Louisiana Arkansas Oklahoma

AMERICAN WELL & PROSPECTING CO.
CORSICANA, TEXAS **California Branch: LOS ANGELES**





Reversing Made Easy

The substantial construction of the Ajax reversing mechanism together with the improved adjustment of the link makes reversing an Ajax Drilling Engine positive and easy.

The curved link on the Ajax Engine is accurately broached to fit the roller which is hardened and ground inside and out. The roller pin is also hardened and ground. The reversing lever is more conveniently placed—throws easier and is built stronger.

Ajax engines are easier to handle and more responsive.

Distributed by
National Supply Companies
in every oil field

Manufactured by
AJAX IRON WORKS
Corry, Pa.

AJAX DRILLING ENGINES

Insist on Genuine Ajax Replacement Parts

3463

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY
Copyright 1920 Axelson Machine Company
Los Angeles

It ran 6 years without a rest

—and still pumping strong

THE performance of an Axelson Working Barrel has made the entire oil country sit up and take notice. 'Way back in 1917, October 2, to be exact, the Colorado Oil Company at Whittier, California, slipped this pump into their No. 5-A well. She's been there at a depth of 1,682 feet ever since, doing her stuff continuously, for, lo, these six long years.

They pulled her up the other day to replace a cut seat, and now the pump's going at it again. It'll probably be pulled again in a few years.

For Long Life
An Axelson is the Surest Bet.

AXELSON MACHINE CO.

Los Angeles St. Louis
Mid-Continent Office: 1023 Kennedy Bldg., Tulsa, Okla.
Carried in Stock and Distributed by Frick-Reid Supply Co.

INDEX TO JOURNAL'S ADVERTISERS

A

Acme Fishing Tool Co. .....
Acme Petroleum Co. 110
Ajax Iron Works 12
Aldrich Pump Co. .....
Alexander, R. E. .....
American Car & Foundry Co. .....
American Dyewood Co. 111
American Pipe Bending Machine Co..
American Rolling Mill Co. .....
American Schaeffer-Budenberg Corp..147
American Sheet & Tin Plate Co.....
American Well & Prospecting Co.... 11
American Zinc, Lead & Smelting Co..157
Anderson, Carl B. 158
Anderson & Anderson 159
Arbon, Paul & Co. .....
Athey Truss Wheel Co. 159
Austin Co. .....
Axelson Machine Co. 13

B

Baker Casing Shoe Co. 153
Ball Swivel Wrench Co. .....
Baldwin Chain & Mfg. Co. 142
Barnickel, Wm. S. & Co. 6
Barnsdall Refining Co. 149
Bartlesville Supply Co. .....
Bear Tractors, Inc. .....
Beaumont Iron Works .....
Bessemer Gas Engine Co. 37
Bignall & Keeler Machine Works....129
Biggs Boiler Works Co. .....
Black, Sivalls & Bryson, Inc. 41
Borden Co. .....
Boykin Machinery & Supply Co.....129
Braden Co., The .....
Bradford Motor Works 156
Brainard & Toulson .....
Bridgeport Machine Co. 66-67
Bristol Co. 153
Broderick & Bascom Rope Co. .....
Brokaw, Dixon, Garner & McKee...159
Brown & Thomsen 158
Brown, Vergil Neal 159
Brown Welding & Machine Co. 120
Brownell Co. .....
Buckeye Traction Ditcher Co. .....
Burhorn, Edwin Co. .....
Burrell, George A. 157
Butler Mfg. Co. .....
Byers, A. M., Co. .....

C

Calorizing Co. 1
Capital Abstract & Realty Co. 141
Carnegie Steel Co. 156
Caudill, Samuel J. 158
Chain Belt Co. .....
Champion Machine & Forging Co. ..125
Chaplin-Fulton Mfg. Co. 152
Chapman Valve Mfg. Co. 8
Chicago Bridge & Iron Works..... 45
Chicago Pneumatic Tool Co. 53
Chisholm-Moore Mfg. Co. 98
Clapp, Frederick G. 155
Clark Bros. Co. 49
Clark, Robert W. 155
Classified Wants 140-141
Close-to-Nature Co. .....
Columbian Rope Co. .....
Columbian Steel Tank Co. .....
Connolly, D. F., Agency, Inc. 122
Consolidated Petroleum Engineers...155
Continental Supply Co.....Roto 9
Cook Paint & Varnish Co. .....
Cooper, C. & G., Co. 61
Cosden & Co. 152
Crandall & Murta 159
Crane Co. .....
Cummins Working Barrel Co.....151
Cyclone Fence Co. .....

D

Darling Valve Mfg. Co. .....
Dart, E. M., Mfg. Co. .....
Davis, G. M., Regulator Co. 151
Dawson Towel Supply Co. 141
Deep Well Engineering Co. .....
De Laval Separator Co. 126
De La Vergne Machine Co. .....
Delta Electric Co. .....
Deming Co. .....
Detroit Belt Lacer .....

D

Detroit Graphite Co. 109
Dickey-Ashby-Fountain Co. 141
Dresser, S. R., Mfg. Co. 25
Dunn Mfg. Co. 55

E

Eastern Torpedo Co. .....
Empire Refineries, Inc. .....
Equitable Meter Co. 159
Essex Brass Corp. 159
Ever-Grip Wrench Co. .....
Exchange National Bank 99

F

Fairbanks-Morse & Co. 137
Fay, Albert H. 159
Federal Engineering Co. 159
Federal Supply Co. .....Roto 21
Fenwick-Reddaway Mfg. Co. 128
Fisher Governor Co. .....
Flexible Steel Lacing Co. 157
Foamite-Childs Corp. .....
Fohs, F. Julius 157
Fort Worth Laboratories 155
Foster & Reiter 157
Foxboro Co., The, Inc. 124
France Packing Co. 151
Francis, Bro. & Co. 154
Franklin Valveless Engine Co. .....
Freeborn Engineering Co. 154
Frick-Reid Supply Co. 96

G

Gantz Tank Co. .....
Gaso Pump & Burner Mfg. Co. 94
Gas-Tite Device Co. .....
General-American Tank Car Corp...
General Electric Co. .....
Gilbert & Barker Mfg. Co. .....
Gomory, W. L. 155
Goodrich, B. F., Rubber Co. .....
Goodyear Tire & Rubber Co. 154
Goulds Mfg. Co. 157
Graver Corp. 131
Greene, Frank C. 157
Greene-Tweed & Co. .....
Griscom-Russell Co. 137
Guiberson Corp. 39
Gurley, W. & L. E. 155

H

Harris Bros. Co. 156
Harrisburg Pipe & Pipe Bending Co..123
Hazard Mfg. Co. 130
Henry, George W. 141
Herald Bros. 159
Hercules Corp. .....
Heydrick Mapping Co. 154
Hinderliter Tool Co., Inside Front Cover
Holt Mfg. Co. .....
Homestead Valve Mfg. Co. .....
Hood, H. H. 156
Hoover Steel Ball Co. .....
Hope Engineering & Supply Co. 133-136
Hopkins, Edwin B. 157
Hough, Chas. N., Mfg. Co. 152
Hughes Tool Co...Back Cover—Roto 11
Hunt, Robert W., Co. 159
Huntley & Huntley 156

I

Illinois Glass Co. 116
Imperial Brass Mfg. Co. .....
Imperial Oil Marketing Co. 114
Industrial Construction Co. .....
Ingersoll-Rand Co. 135
International Creosoting & Construction Co. 59
International Derrick & Equipment Co. .....Roto 7
International Supply Co. 15
Iron King Mfg. Co. .....

J

Jarecki Mfg. Co. 119
Jeffrey, G. 159
Jeffery, W. H., Co. .....
Jeffrey Mfg. Co. 150
Johns-Manville, Inc. .....
Johnson, Roswell H. 158
Jones, S. M., Co. 43

K

Kansas City Hay Press Co. 149
Kansas City Structural Co. 135
Kaw Boiler Works Co. 8
Kellogg, M. W., Co. 127

K

Kelly & Jones Co. 121
Kelly-Springfield Tire Co. 5
Kewanee Boiler Co. 132
Kliewer Steam Snuffer Mfg. Co. ....
Kirk & Hoover 158

L

Lafe Speer Abstract Co. 141
Larkin & Co. 148
Lasky, Bernard H. 156
Leader Iron Works.....
Leader-Trahern Co. .....
Leidecker Tool Co. 133
Lewis, James O. 155
Link-Belt Co. 101
Lockett, A. M., Co., Ltd. .....
Logue, A. R. .....
Longyear, E. J., Co. 157
Ludlow Valve Mfg. Co. 150
Lufkin Rule Co. .....
Lunkenheimer Co. .....

M

Magnolia Petroleum Co. .....
Maloney Tank Mfg. Co. ..Front Cover
Marland Refining Co. .....
Marsh Gauge Pole Co. .....
Matson, George C. 159
Matteson, W. G. 157
Messimer, H. H. 158
Metric Metal Works 127
Miller Improved Gas Engine Co. 7
Miller, Max B. & Co., Inc. .....
Moon Mfg. Co. 148
Moore, Lee C., & Co., Inc. .....Roto 2
Morrison Bros. 107
Munn & Co. 156
Myrick Machine Co. .....

Mc

McCord Radiator Mfg. Co. 134
McDonald, A. Y., Mfg. Co. .....
.....Inside Back Cover
McGrath, T. S. 153
McGregor Working Barrel Co. ....
McNutt, V. H. 157

N

National Airoil Burner Co. 158
National Lead Co. .....
National Supply Co. ....63, Roto 12-13
National Transit Pump & Mach. Co. 27
National Tube Co. 57
National Turnbuckle Derrick Co. ...115
New Bedford Cordage Co. .....
Norris Bros. 146
North American Car Co. .....
Northern Oil Information Bureau..154
Nye Tool & Machine Works.....155

O

O'Brien Steel Construction Co. 147
Ohio Structural Steel Co. .....
Oil City Map Co. 152
Oil Conservation Engineering Co. ..
Oil Country Specialties Co. .....
Oil Well Improvements Co.....Roto 24
Oil Well Supply Co. 29-Roto 5
Oster Mfg. Co. 147

P

Page Fence & Wire Products Assn.
Parker Cup & Specialty Co. .....
Parkersburg Machinery Co. 146
Parkersburg Rig & Reel Co. 35
Pattin Bros. Co. 139
Penn American Refining Co. .....
Pennsylvania Petroleum Co. 155
Pennsylvania Tank Car Co. 142
Petroleum Iron Works 105
Petroleum Safety Appliance Co. ....
Pforzheimer, Carl H., & Co. 138
Pioneer Tank & Boiler Co. 154
Pittsburgh-Des Moines Steel Co. 138
Pittsburgh Meter Co. 156
Powell, Wm., Co. .....
Power Engineering & Ignition Co., Inc. 154
Prewitt & Hauser 158
Producers & Refiners Corp. 154
Pure Oil Co. .....
Pyle National Co. 64

Q

Quimby, Wm. E., Inc. 155

R

Ransomerian Business School .....
Reading Iron Co. .....
Reading Steel Casting Co. .....
Reed Roller Bit Co. .....
Reid, Joseph Gas Engine Co. .....
Republic Iron & Steel Co. .....
Republic Supply Co. .....
Rich, John L. .....
Ring, Dewitt T. .....
Rock Island Plow Co. .....
Roots, P. H. & F. M., Co. .....
Rossendale-Reddaway Belting & Hose Co. .....
Ross-Meehan Foundries .....
Ruby, Glen M. .....
Ryerson, Joseph T., & Son .....

S

Sand Springs Water Co. .....
Shaffer Specialty Co. .....
Shaw, E. W. .....
Shippers' Car Line, Inc. .....
Sinclair Refining Co. .....
Sistersville Tank & Boiler Works...
Sivyer Steel Casting Co. .....
Smith Separator Co. .....Roto
South Chester Tube Co. .....
Spence, H. M. .....
Spencer Petroleum Co. .....
Stalder, Walter .....
Standard Engineering Co. .....
Standard Machine & Tool Co. .....
Stanley Belting Corp. .....
Star Drilling Machine Co. .....
Stewart Iron Works Co. .....
Stewart, Irvine E. .....
Stitt Ignition Co. .....
Stockman & Fees .....
Stull, J. C. .....
Sullivan Machinery Co. .....
Superior Tube Co. .....

T

Taxman Refining Co. .....
Taylor Instrument Co. .....
Texas Co., The.....
Texas Gulf Sulphur Co. .....
Texas Oil Pump Co. .....
Thomas, J. Elmer.....
Titusville Iron Works.....
Tnemec Paint & Oil Co. .....
Toledo Pipe Threading Machine Co.
Trimont Mfg. Co. .....
Trumble Gas Trap Co. .....
Truscon Steel Co. .....
Tucker, Jas. I., Co. .....
Tulsa Ice Co. .....

U

Union Machine Co. .....
United Iron Works .....
Universal Oil Products Co. .....

V

Vanadium Corp. of America.....
Vogt, Henry, Machine Co. .....

W

Ward-Way, Inc. .....
Washburne, C. W. .....
Waukesha Motor Co. .....
Weaver, Ralph, M., Jr. .....
Wells, O. W. & Co. .....
Westcott Valve Co. .....
Westerman Bros. .....
Western Bank Supply Co. .....
Western Machinery Co. .....
Westinghouse Electric & Mfg. Co. 46-47
Wharton, Wm., Jr., & Co., Inc. .....
Wheatley Bros. .....
Wheeling Steel Corp. .....
Whitlock Cordage Co. .....
Wickwire-Spencer Steel Corp. .....
Wilcocks, A. .....
Williams, J. H. & Co. .....
Williamsport Wire Rope Co. .....
Wilson Oil Tools Corp. .....Roto 15
Winchester, Dean E. .....
Wood & Wood .....
Workman Sheet Metal Roofing Co. ..
Worthington Pump & Mach. Corp. ..
Wright, Harry F. .....
Wyoming Map & Blue Print Co. .....

Y

Yale & Towne Mfg. Co. .....
Youngstown Boiler & Tank Co. .....

A Story of Oil Field Supply Quality and Service ~ told in Trade-marks!

INTERNATIONAL SUPPLY CO.

Branch stores in 18 of the leading oil field towns in Oklahoma, Kansas, Wyoming and Montana.

General Offices and Works
Tulsa, Okla.

District Offices: Denver, Colorado and Fort Worth, Texas

The Season of Good Will

Christmastide, 1923, finds the Petroleum Industry emerging from the most disastrous year in its history with a seasonable realization of the urgency and necessity for the cultivation of good will and understanding among its various branches.

Reviewing the period of depression, thoughtful observers will acknowledge that many of the troubles experienced by the oil business might have been avoided by a better appreciation of each other's problems and position. The season of peace and good will offers opportunity for calm consideration of this point from many angles.

Something of this spirit was voiced by some of the speakers at the St. Louis meeting of the American Petroleum Institute. The period of adversity which was felt by men in every department of the industry promoted a sense of mutuality of interest which in itself makes for that cooperation and good will of which the Yuletide season is typical.

Oil men are coming to realize with a fresh significance that the interests of one are the interests of all, that, as the late Theodore Roosevelt said in another connection, "we all go up or we all go down together." Seeking selfish advantage for one branch at the expense of another may seem to the thoughtless a profitable policy but this year's experience ought to have, and it apparently has, taught many differently.

The prosperity of each and every branch is bound up in the prosperity of the others. One cannot be forced to do business at a loss without in turn reacting upon the rest. Quarrels within the industry, moreover, furnish opportunity for outsiders to seek advantage by attacks upon the industry which sooner or later injure everyone within it.

The remedy is that offered by the spirit of the holiday season—the sense of unity and fellowship in a common cause, the cultivation of industrial peace and personal goodwill instead of fanning the fires of resentment and antagonism which in the end consume those who ignite them.

Recent gatherings of oil men have gone far to show that most of the misunderstandings which have kept the industry in a ferment and have left the way open for destructive criticism and denunciation can be wiped out by personal contact and coming together for counsel.

Generally, as in politics, the most rabid antagonisms are those based on the least knowledge. This has been notoriously so in the oil business and with those outside of it who have been most bitter in slandering it. To these we commend the Christmastide charity of spirit and fellowship and the aspiration of the angelic host above the hills of Bethlehem.

To the Petroleum Industry to whose interests The Oil and Gas Journal devotes its service and to all those engaged in the great enterprise of supplying Twentieth Century civilization with the magic fluid that furnishes it material momentum we extend the heartiest greetings of the season and the wish for profitable meditation upon the Divine lesson which the motto of the day carries to mankind.